6 Conclusions and Recommendations

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 RECOMMENDED MITIGATION AND MONITORING PROGRAM

A review of the information provided by the Project Applicant and further developed from data requests, scoping and literature research, and alternatives analysis shows that the Project would result in both minor and major, adverse, short and long-term adverse impacts.

The Project's potential construction impacts would be minor to moderate short-term, and after mitigation measures are implemented, most of the impacts would be reduced to below their significance criteria. Significant and unavoidable impacts during construction would be offshore noise impacts, and onshore air quality, noise, vibration, and transportation impacts.

While most of the Project impacts during the operation phase would be reduced to below their significance criteria with implementation of mitigation measures, minor to moderate long-term, unmitigable significant impacts would remain for public safety, aesthetics, agriculture and soils, air quality, marine biology, noise, recreation, and water quality.

Table 6.1-1, which follows the text of Section 6.2, presents a summary of the Project's impacts and the Applicant measures (AMs) and mitigation measures identified to avoid or reduce each impact, the location of the impact, the agencies responsible for monitoring each of the mitigation requirements, and the timing of the mitigation. This summary table is the basis for the Mitigation Monitoring Program, which would be implemented to ensure that each mitigation measure is incorporated into Project construction, operation, and maintenance activities.

6.2 ENVIRONMENTALLY PREFERABLE ALTERNATIVE/ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The Council on Environmental Quality (CEQ) regulations for implementing NEPA require that the Record of Decision (ROD) specify "the alternative or alternatives which were considered to be environmentally preferable" (40 C.F.R. § 1505.2(b)). As defined by the CEQ, the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Under the Deepwater Port Act (DWPA), the Maritime Administrator is the decision-making authority who issues a ROD to approve, approve with conditions, or deny a license application for a deepwater port. Because of MARAD's authority, the Final EIS/EIR does not identify an environmentally preferable alternative; to do so would be pre-decisional. Prior to issuing a license the Administrator will review and analyze all of the relevant information pertaining to the license application, as required under the DWPA. If the license is approved, or approved with conditions, the Administrator will indicate the agency's preferred alternative in the ROD.

Section 15126.6(e)(2) of the State CEQA Guidelines provides in part, "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." If the proposed Project were not approved, the significant adverse environmental impacts identified in this document would not occur. For the immediate future, the status quo would be maintained or modified as discussed in Section 3.4.1, and therefore, No Action would likely be environmentally superior, at least temporarily.

It is unclear, however, based on the information available, whether the No Action Alternative would remain the environmentally superior alternative. According to the California Energy Commission, new sources of energy will be required to meet the State's growing demand. It is therefore reasonable to assume that if the proposed Project were not approved (i.e., if the No Action Alternative is selected), the State's demand will be met by other energy development projects both in the short-term and the long-term.

If an energy development project with fewer significant environmental impacts than the proposed Project were subsequently approved, the No Action Alternative would be, in hindsight, the environmentally superior alternative. Other energy development projects, including other offshore LNG or pipeline facilities, are discussed in Chapter 3, "Alternatives." Considering the uncertainty of other onshore and offshore LNG projects, other types of energy development projects, their timing, and their environmental impacts, it is not possible to determine with certainty whether the No Action Alternative is or would be the environmentally superior alternative.

6.2.1 Comparison of Proposed Project and SB Channel/Mandalay/Gonzales Road DWP Alternative

While the proposed Project could be built at either location, the proposed Project location is preferable to the Santa Barbara Channel alternative. The location of the FSRU is farther from land than the Santa Barbara Channel alternative. As a result, this location would have less of a visual impact; fewer potential conflicts with recreational fishers, boaters, marine mammals; and less of an impact on commercial fishing and marine traffic. Although it poses a greater potential for conflict with the operations of the Navy Sea Range Point Mugu, these impacts can be mitigated by coordination and communication with the Navy.

The proposed Project shore crossing at the Reliant Ormond Beach Generating Station is preferable to the Reliant Mandalay Generating Station Shore Crossing because there are many more sensitive species that could be adversely impacted within or adjacent to the latter shore crossing ROW than the former. The Center Road Pipeline is preferable to the Gonzales Road Pipeline because during its construction it would affect fewer people and less traffic would be disrupted on significant thoroughfares.

6.2.2 Comparison of Proposed Project and Shore Crossing Alternatives

Three alternative shore crossings to the proposed Project shore crossing were considered: the shore crossing at the Reliant Mandalay Generating Station that was discussed in the previous section, the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, and the Point Mugu/Casper Road Pipeline Alternative. The Reliant Ormond Beach Generating Station Shore Crossing is preferable to the Arnold Road Shore Crossing/Arnold Road Pipeline and the Point Mugu/Casper Road Pipeline Alternative because it could be constructed entirely on disturbed land. Both the Arnold Road and Point Mugu Alternatives would be constructed on undeveloped, moderately developed, and agricultural lands. As a result, both the Arnold Road and Point Mugu shore crossings would have greater potential impacts to sensitive terrestrial biota than at the proposed Project shore crossing location. Construction at the Arnold Road Alternative would temporarily limit access to Ormond Beach and parking for recreational beach users, while construction at the proposed Project or the Point Mugu shore crossing location would not limit access or parking at Ormond Beach.

Although the Arnold Road metering station and odorant facility would be fenced, it would not be guarded as it would in its proposed location within the Reliant generating plant site. The Point Mugu odorant station and metering station be located outside the Point Mugu facility, which makes it slightly less preferable. Therefore, like the Arnold Road location, the Point Mugu odorant and metering stations would not be guarded. While the risks of an accident involving a release of either the odorant or unodorized natural gas is very small, the secure and secluded nature of the Reliant station makes it preferable to the Arnold Road or Point Mugu locations. Both metering stations for the Arnold Road and Point Mugu Alternatives would be built on agricultural lands and therefore would result in the permanent conversion of agricultural land to non-agricultural uses.

The Point Mugu site offers the benefit of controlled access during the HDB operations and no beach users would be affected. However, construction would need to be scheduled to avoid sensitive species that use the beach, which would be avoided at the Reliant Ormond Beach facility because the land is already disturbed.

Due to their distances from residences and other features, the noise and vibration generated by the Arnold Road and Point Mugu alternatives would have fewer adverse effects that the proposed Project.

Although the Casper Road and Arnold Road Pipelines that would connect the respective shore crossings with the Center Road Pipeline would both be shorter than the proposed Project, the difference in length is insignificant when the fact that the pipelines would be installed in existing road rights-of-way is considered. For these reasons, although any of the three shore crossings could probably be constructed, the Reliant alternative is environmentally preferable.

6.2.3 Comparison of Proposed Project and Alternative Onshore Pipeline Route Alternatives

Any of the proposed pipelines would be required to be designed and operated in compliance with Federal and State laws that would ensure their safe construction and operation; however, some differences exist among the alternatives. A number of potential routes were considered, and three alternatives to the Center Road Pipeline, Gonzales Road Alternative, and one alternative to the Line 225 Loop were carried forward for analysis, in addition to the Gonzales Road Alternative considered as a component of the Santa Barbara Channel alternative.

The Applicant originally proposed Center Road Alternative 1 as the Project. However, during public scoping, many concerns were expressed regarding this route, and the Applicant developed a new alternative now identified as the proposed Center Road Alternative. In response to comments on the October 2004 Draft EIS/EIR, a new proposed Center Road route was developed that avoids passing by Mesa Union School. Center Road Alternative 3 is the former proposed Center Road route described in the October 2004 Draft EIS/EIR. All the other Center Road Alternatives pass adjacent to the Mesa Union School. Although any of the four pipeline alternatives could be built, the proposed Project would avoid many of the construction related disturbances that affect the public because it would be constructed in existing roadways and other rights-of-way primarily through agricultural areas and it would avoid Mesa Union School.

Center Road Alternative 1 is longer and would affect more High Consequence Areas than the proposed route. Since Center Road Alternative traverses more developed and urban areas than the proposed Project, it would have more adverse effects to businesses and residences along the pipeline route during construction due to increased traffic, noise, and vibrations; however there would be fewer impacts to agricultural lands, wetlands, and terrestrial biota. Similar to Center Road Alternative 1, the Gonzales Road Alternative traverses urban and residential areas and has similar effects. The proposed Project pipeline route is preferable because it would result in fewer impacts to residences and businesses, and the impacts to agriculture and terrestrial biological resources can be mitigated.

Center Road Alternative 2 poses fewer impacts on businesses; however, this is a minor difference. It crosses several more acres of jurisdictional water bodies. It also follows Pleasant Valley Road for a greater distance, which could have greater traffic impacts. Overall, these are relatively small differences, and either pipeline could be environmentally acceptable.

Center Road Alternative 3 is the former proposed Center Road route described in the October 2004 Draft EIS/EIR. Center Road Alternative 3 follows the same route as the proposed Center Road Alternative until the corner of Los Angeles and Santa Clara Avenues where this alternative continues up Santa Clara Avenue and turns on La Vista. The proposed Project route is preferable because it avoids passing adjacent to the

Mesa Union School; however, it crosses fewer water features than the proposed Project.

The Line 225 Pipeline Loop Alternative follows the same route as the proposed Line 225 Pipeline Loop from MP 0.0 to MP 4.8 and MP 6.8 to MP 7.71 of the proposed route. Line 225 Pipeline Loop is preferred because the alternative would disturb a greater area of jurisdictional waterbodies and therefore would have greater potential impacts to terrestrial biota.

The comparison matrices in Tables 6.2-1 (Proposed Offshore Project Components and Alternatives), 6.2-2 (Proposed Onshore Pipeline Project Components and Alternatives), and 6.2-3 (Proposed Shore Crossing Components and Alternatives), which follow Table 6.1-1, summarize the comparison of impacts for the proposed Project and Alternatives discussed above.

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
PUBLIC SAFETY (Section 4.2)				
FSRU				
PS-1: *Potential Minor Release of LNG due to Operational Incident or Natural Phenomena at the FSRU or an LNG Carrier* An incident at the FSRU or LNG carrier due to human error, upsets, or equipment failures, or as a result of natural phenomena (severe wave conditions, high winds, etc.) could cause a release of LNG from the FSRU or an LNG carrier that would have a limited area of effect (CEQA Class II; NEPA minor adverse, long-term).	**AM PS-1a. Applicant Engineering and Project Execution Process.** The Applicant would undertake—regardless of any less stringent regulatory requirements—the following steps to design, build, and operate the proposed Project: 1) Prior to final internal Project funding, undertake a full Front End Engineering Design (FEED) exercise with a suitably qualified and experienced contractor under the management of an Applicant technical team. This would define the engineering requirements for the complete Project and identify sources for all remaining detailed information and data, to be ready for internal Project sanction and final detailed engineering. 2) Undertake a comprehensive offshore site survey to determine bathymetry, geology, and geotechnical characteristics of the area in and immediately around the locations of each element of the Project. This would require mobilization of specialized marine vessels and crews to perform the acoustic surveying and soil coring for the shallow water horizontal directional boring (HDB) of the pipelines crossing under the beach to the FSRU mooring in deep water. The survey results would provide additional information for the final detailed design of the HDB, pipelines, cable crossings, pipeline end manifolds, and mooring system anchors. 3) Fully implement the proposed Project under a self-imposed "Safety Case" process for the detailed design of the proposed Project.[3] This would begin with the FEED but could be completed only when the level of the facility definition is in the advanced detailed design phase. This would require a complex series of	Offshore	USCG	Pre-construction, Construction, Post-construction, and Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	additional detailed safety checks and balances be put into place, including HAZID, hazard and operability studies (HAZOPs), quantitative risk analyses (QRAs), formal safety assessments (FSAs), and associated safety engineering exercises such as process plant modeling and analyses. This would be finalized during the detailed design of the FSRU safety systems, the process plant and deck layouts, and the associated systems such as piping and utilities, and the control systems and procedures. Upon start-up, the safety case would become a "living tool" for the facility operating team—one that would be updated and reanalyzed as needed based on operational experience—to ensure that the proposed Project meets or exceeds required standards during all phases of operation. [3] A safety case is a documented body of evidence that provides a demonstrable and valid argument that a system is adequately safe for a given application and environment over its lifetime. 4) Upon internal Project sanction/funding, ensure detailed engineering would be conducted for all components by suitably qualified and experienced contractors under the management of an Applicant technical team and in accordance with demanding technical requirements that would be carefully defined in contractual documents. The selected qualified engineering contractors would likely be different for the contractor designing the hull, regasification topsides, mooring, pipelines, etc. Using this process, the Applicant would ensure that all engineering is executed to meet or exceed the regulatory and Applicant's internal requirements. 5) Commission a series of model tests of the FSRU facility at an experienced and well-established model test basin. More advanced detailed theoretical analyses			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	would be completed first to identify the governing criteria and cases to be modeled in the basin. These model tests would cover both the survival sea states without an LNG carrier moored alongside and the operational sea states with the carrier moored alongside the FSRU. FSRU motions and mooring system loads would be measured under survival storm conditions to confirm the calculated results. Similarly, relative and absolute motions of and between the FSRU and the berthed carrier would be measured to confirm the operability limits of the berth mooring, fender, and loading arm systems. This would also provide information about FSRU motions for the detailed design of the topsides equipment. 6) The Applicant would require independent third-party verification of detailed engineering, procured equipment, fabrication, construction, and offshore installation and commissioning of all Project components. Where such independent third-party verification would be required by a regulatory agency, or in order to obtain class certification, a single verification process would be conducted to ensure efficiency of this verification. 7) During the construction phases of the proposed Project, both quality and safety audits at major fabrication/ construction sites would be undertaken by the Applicant to ensure quality and safety of the Project components. Actual safety and quality performance during construction would be a contractual obligation for the various contractors selected by the Applicant. 8) Before releasing the FSRU from its inshore commissioning, i.e., before towing to the proposed Project site, and after offshore installation of all components, but before facility start-up, the Applicant would conduct a formal pre-startup review. The status of the facility, quality assurance, "outstanding items,"			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	operational preparedness, and compliance with legal and regulatory commitments would be carefully reviewed in a team session with final checks before proceeding first with the tow and second with initial start-up of LNG operations. A number of action items would generally be identified in such sessions; some would require closure before proceeding to the next step, and others would be identified for action by specific deadlines or milestones. This process and any findings would be formally documented. **AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU.** Class certification and a safety management certificate are required under international agreements, i.e., through the IMO, for vessels engaged in international voyages. Although this would not be required for the stationary FSRU, the Applicant would obtain class and safety management certification for the facility, including the subsea pipelines, pipeline end manifold, and risers. The Applicant would voluntarily provide a documented management system that would comply with the International Safety Management Code and the Applicant's internal health, safety, engineering, and construction standards. When operational, the FSRU would be certifiable under the International Safety Management, International Organization for Standardization (ISO) ISO-9000 quality standards and ISO-14000 environmental standards.[4] [4] A comprehensive safety management audit determines if the facility is complies with the tenets of the ISM Code and the vessel is operated safely and responsibly for the safety of personnel and the environment). The audit must be conducted by third party auditor (normally a classification society such as ABS, Lloyds, DNV) to ensure a fair and objective determination is made. The audit must be conducted in accordance with IMO Resolution A.788(19), Guidelines on			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Implementation of the ISM Code by Administrations. Once the audit is satisfactorily completed, the vessel operator is issued either a Document of Compliance or Safety Management Certificate (for U.S. flag vessels), which is valid for 5 years. **AM PS-1c. Periodic Inspections and Surveys by Classification Societies.** The Applicant would conduct periodic inspections of the FSRU by classification societies, including annual inspections and a full survey after five years of facility operation and every five years thereafter. This would help ensure that shipboard procedures are regularly reviewed and updated and that processing and emergency equipment would be maintained appropriately and repaired or upgraded as necessary. **AM PS-1d. Designated Safety Zone and Area to be Avoided.** The Applicant would monitor a 1,640-foot (500 m) radius safety zone to be designated by the USCG around the FSRU where public maritime traffic would be excluded. The Applicant has also proposed designating an Area to be Avoided with a radius of 2 NM (2.3 miles or 3.7 km) around the FSRU. Each of these zones would be marked on nautical charts and would serve as part of the Notice to Mariners to avoid this area. **AM MT-3a. Patrol Safety Zone** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-3d. Control Room Team Management Techniques** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-3e. Broadcast of Navigational Warnings** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM PS-1e. Cargo Tank Fire Survivability.** The Applicant shall provide safety engineering, HAZIDs, HAZOPs, and QRA supporting the detailed engineering design, including cases where cargo tank insulation is presumed to fail in the event of a fire.			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	MM PS-1f. Structural Component Exposure to Temperature Extremes. The Applicant shall provide safety engineering, HAZIDs, HAZOPs, and QRA supporting the detailed engineering design, including cases where decking, hulls, and structural members are exposed to both cryogenic temperatures from spilled LNG and exposure to extreme heat from a fire, e.g., the Moss storage tanks would be designed with a steel outer shell to provide a barrier against excessive heat and fire in the event of an emergency in the regasification area, and to minimize impacts on multiple tanks. **MM PS-1g. Pre- and Post-Operational HAZOPs.** The Applicant shall conduct HAZOPs that address all LNG operations prior to beginning operation and after one year of operation. The results of these reviews shall be used to improve and refine operations practices and emergency response procedures. After the initial and first post-operational HAZOPs, additional HAZOPs shall be conducted every two years unless there has been a change in equipment or other significant change. The results of these reviews shall be reviewed as part of configuration management when any equipment, operational, or procedural changes have been undertaken that would necessitate conducting an additional HAZOP review for the new configuration. HAZOPs may be conducted by the Applicant or by a qualified third party, including participation by the CSLC. **MM MT-3f. Live Radar and Visual Watch** would apply to this impact (see Section 4.3, “Marine Traffic”).			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
PS-2: *Potential Release of LNG due to High-Energy Marine Collision or Intentional Attack* A high-energy collision of another vessel with the FSRU or an LNG carrier or an intentional attack could cause a rupture of the Moss tank(s) holding LNG, leading to a release of an unignited flammable vapor cloud that could extend beyond the 1,640-foot (500 m) radius safety zone around the FSRU, impact any members of the boating public in the identified potential impact area, and impact boats traveling in the Traffic Separation Scheme (CEQA Class I; NEPA major adverse, short-term).	**AM PS-2a. AIS, Radar, and Marine VHF Radiotelephone.** The Applicant would equip the FSRU with an AIS and with real-time radar and marine VHF radiotelephone capabilities. **AM PS-1a. Applicant Engineering and Project Execution Process.** **AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU**. **AM PS-1c. Periodic Inspections and Surveys by Classification Societies**. **AM PS-1d. Designated Safety Zone**. **AM MT-3a. Patrol Safety Zone**. **AM MT-3b. LNG Carrier Monitoring by the FSRU**. **AM MT-3c. One LNG Carrier in Approach Route**. **AM MT-3d. Control Room Team Management Techniques**. **AM MT-3e. Broadcast of Navigational Warnings**. **MM PS-1e. Cargo Tank Fire Survivability**. **MM PS-1f. Structural Component Exposure to Temperature Extremes**. **MM PS-1g. Pre- and Post-Operational HAZOPs**. **MM MT-3f. Live Radar and Visual Watch** (see Section 4.3, “Marine Traffic”). **MM MT-3g. Information for Navigational Charts** (see Section 4.3, “Marine Traffic”).	Offshore	USCG	Pre-Construction, Construction, Post-Construction, Operations
Offshore Pipelines				
PS-3: *Potential Release of Odorized Natural Gas due to Damage to Subsea Pipelines.* Fishing gear could become hung up on the pipelines and potentially damage one or both of the subsea pipelines. Similar	**AM PS-3a. More Stringent Pipeline Design.** The Applicant would design and install pipelines to meet seismic criteria to ensure that pipeline integrity is maintained during severe seismic events that might be expected to bend or bow the pipelines.	Offshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
damage may occur due to a seismic event or subsea landslide (CEQA Class I; NEPA major adverse, short-term).	**MM PS-3b. Emergency Communication/Warnings.** The Applicant shall institute emergency plans and procedures that require immediate notification of vessels in any offshore area, including hailing and Securite broadcasts, and immediate notification of local police and fire services whenever the monitoring system indicates that there might be a problem with subsea pipeline integrity. **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System**. The Applicant shall identify any offshore or onshore areas where the new transmission pipelines may be subject to accelerated corrosion due to stray electrical currents, and implement precautions and mitigation measures as recommended in a November 12, 2003 Federal OPS pipeline safety advisory (68 FR 64189). Cathodic protection systems shall be installed and made fully operational as soon as possible during pipeline construction. **MM MT-1d. Securite Broadcasts** (see Section 4.3, "Marine Traffic"). **MM MT-3g. Information for Navigational Charts** (see Section 4.3, "Marine Traffic").			
Shore Crossing				
PS-4: *Impact PS-4. Potential Release of Odorized Natural Gas due to Accidental Damage to Onshore Pipelines* The potential exists for accidental or intentional damage to the onshore pipelines or valves carrying odorized natural gas. Damage, fires, and explosions may occur due to human error, equipment failure, natural phenomena (earthquake, landslide, etc.). This would result in the release of an odorized natural gas cloud at concentrations that are likely	**AM PS-4a. Class 3 Pipeline Design Criteria.** The Applicant or its designated representative would construct all pipeline segments to meet the minimum design criteria for a USDOT Class 3 location, which would improve safety and reduce the need to reconstruct the pipeline segments as additional development and population densities increase along the onshore pipeline corridor. **MM PS-4b. Pipeline Integrity Management Program.** The Applicant shall develop and implement a pipeline integrity management program, including confirming all potential HCAs (including identification of potential sites from "licensed" facility information [day care, nursing care,	Onshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
to be in the flammable range (CEQA Class I; NEPA major adverse, short-term).	or similar facilities] available at the city and county level) and ensuring that the public education program is fully implemented before beginning pipeline operations. **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls.** The Applicant shall install five approximately equally spaced sectionalizing valves with appropriately sited and sized blowdown stacks on the Center Road Pipeline. The Applicant shall install three approximately equally spaced sectionalizing valves with appropriately sited and sized blowdown stacks on the Line 225 Pipeline Loop. The number of valves includes the station valves at each end of these pipelines. All valves shall be equipped with either remote valve controls or automatic line break controls. **MM PS-4d. Treat Shore Crossing as Pipeline HCA.** The Applicant shall treat any onshore public beach area, under which is located a pipeline(s) that is carrying natural gas, as an HCA. **MM PS-4e. Safety Marker Indicating the Presence of Buried Natural Gas Pipeline at Ormond Beach.** Prior to the operation of the shore crossing pipelines, the Applicant shall install signage indicating the presence of the buried natural gas pipeline at Ormond Beach. The sign shall list the Operator's name and shall include a toll free number to call for information, in case of plans to dig in the area, or to report a leak, or an emergency. **MM PS-4f. Emergency Response.** The Applicant shall implement emergency plans and procedures as specified in its operations plan and shall immediately dispatch trained personnel to the area to investigate the emergency and secure the area until the release has been stopped and pipeline integrity under the beach is assured as verified by the Applicant. The emergency plans shall be in compliance with OPS Advisory Bulletin ADB-05-03, which requires			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	preplanning with other utilities for coordinated response to pipeline emergencies. **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System.**			
PS-5. *Increased Potential for Injury, Fatality, and Property Damage Due to Fire or Explosion in Areas with Less Robust Housing Construction and Outdoor Activity.* In the event of an accident, there is a greater likelihood of injury, fatality, and property damage near Center Road Pipeline MP 4.1, an HCA (CEQA Class I; NEPA major adverse, short-term).	**AM PS-4a. Class 3 Pipeline Design Criteria**. **MM PS-5a. Treat Manufactured Home Residential Community as a High Consequence Area.** The Applicant shall treat as a HCA those areas where the potential impact radius includes part or all of a manufactured-home residential community, including outdoor gardens and areas with one or more normally occupied mobile homes or travel trailers used as temporary or semi-permanent housing.` The Applicant shall enact for these areas the pipeline safety requirements contained in 49 CFR Part 192 Subpart O.	Onshore	USCG/CSLC	Pre-Construction, Construction
MARINE TRAFFIC (Section 4.3)				
Offshore Construction				
MT-1: *Temporary Increase in Maritime Traffic during Installation of the Mooring System, FSRU Mooring, Offshore Pipeline Construction, and Shore Crossing Resulting in Increased Safety Risks.* Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, and subsea pipelines could temporarily increase maritime traffic congestion and increase the risk of vessel collision (CEQA Class II; NEPA minor adverse, short-term).	**AM MT-1a. Safety Vessel Warnings**. During offshore construction, a safety vessel would be stationed 3 to 5 NM (3.5 to 5.8 miles or 5.6 to 9.3 km) from the pipelaying barge in the direction of predominant traffic flow to warn vessels approaching construction that deviation from their course and speed is necessary. **AM MT-1b. Automatic Identification System**. The pipelaying barge and associated vessels would be equipped with AIS. **MM MT-1c. Notices to Mariners.** The Applicant shall ensure that Notices to Mariners contain planned positions of vessels for the entire construction period, planned traffic lane closures, speed restrictions in the vicinity of vessels, and alternative routes and radio channels that Project vessels shall monitor and work. These notices shall include vessel names, if available, and shall mention the	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	presence of the safety vessel(s) identified in MM MT-1e. The Applicant shall submit unforeseen short-notice changes to the USCG for dissemination as a Broadcast Notice to Mariners and shall include such changes in the Securite broadcasts identified in MM MT-1d. **MM MT-1d. Securite Broadcasts.** The Applicant shall ensure that a Project vessel in the construction area makes Securite broadcasts on VHF-FM at half-hour intervals, informing mariners about the current construction location, any lane restrictions, and preferred speed and standoff distances from the Project vessels and trailing pipeline. The vessel could be the safety vessel identified in MM MT-1e. **MM MT-1e. Safety Vessel.** The Applicant shall ensure that a safety vessel is present at all times during construction, be equipped with radar and marine VHF radio, be of sufficient size and type, and have a sufficiently trained crew to respond to emergencies. This vessel's captain shall instruct intercepted vessels as to the location of construction vessels and the standoff distances from vessels and the pipelines to ensure that the intercepted vessel safely avoids the construction zone. This vessel shall be of sufficient speed to intercept vessels failing to alter course or answer radio hails. Alternatively, more than one vessel of this type shall be used and stationed in various positions around the construction site to ensure full coverage of the construction area. **MM MT-1f. Guard Boats.** The Applicant shall station two guard boats, in addition to the safety vessel identified in MM MT-1e, on watch while construction takes place in waters less than 656 feet (200 m) deep where trawling occurs to warn or intercept commercial fishing vessels before they reach the construction area. These smaller guard boats shall be stationed on either side of the construction vessels to intercept the faster recreational			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	vessels that may not have marine radios. The guard boats shall be equipped with spotlights for identification of non-answering vessels at night and loud hailers or bullhorns to warn these vessels about the construction area. **MM MT-1g. Construction Schedule Signs.** The Applicant shall post signs at local marinas and ports to inform the public of the nearshore construction schedule at least one month prior to the first day of construction. One week prior to construction the Applicant shall replace any signs that are no longer present.			
MT-2: *Long-Term Increase in Maritime Traffic during Offshore Operations* LNG carriers, tugs, and attending vessels transiting to and from the FSRU, could increase maritime traffic congestion during Project operations (CEQA Class II; NEPA minor adverse, long-term).	**AM MT-2a. Provisions for Delays.** Project vessels for Project operations (including LNG carriers) would not use anchorages except possibly in emergency situations. If there is a delay in docking, LNG carriers would slow their speed to arrive at a suitable time or stop or drift between 100 and 200 NM (115 and 230 miles or 185 and 370 km) offshore. **AM MT-2b. Established Routes to and from Port Hueneme.** Vessels would use the routes depicted on Figure 4.3-3 to travel to and from Port Hueneme. **AM MT-2c. Compliance with JOFLO Vessel Traffic Corridors.** The Applicant would abide by the JOFLO corridors that direct traffic into specified patterns within 30 fathoms (180 feet) of shore established by JOFLO. Although JOFLO is not a governmental agency and has no jurisdiction to set marine traffic corridors, the Applicant would respect its established corridors. **MM MT-2d. Incorporation of Procedures for Delays.** To formalize AM MT-2a, the Applicant shall incorporate procedures that mandate early notification of possible delays into the facility operations manual for LNG carriers so that a carrier might reduce transit speed in order to arrive at a later time and shall contact the incoming ship once it is determined that a delay may occur to instruct	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	them to stay at least 100 NM (115 miles or 185 km) offshore. **MM MT-2e. Evaluation of Routes to and from Port Hueneme.** After operating for six months, the Applicant and the Port of Hueneme Safety Committee shall assess the volume of vessel traffic, types of vessels, frequency of encounters, if any, and any reported incidents to determine whether Project vessel operations should be modified. The Applicant shall be required to comply with any requested modifications.			
MT-3: *Long-Term Increase in Safety Hazards due to the Presence of the FSRU and LNG Carriers* The FSRU mooring location would be situated approximately 2 NM (2.3 miles or 3.7 km) from the Southbound Coastwise Traffic Lane of the Santa Barbara Channel TSS, which has relatively high levels of maritime traffic. In addition, vessels entering/leaving Port Hueneme or other local marina could pass nearby; thus, maritime traffic could be substantially increased with Project operations and the risk of vessel collision could be increased (CEQA Class II; NEPA minor adverse, short-term).	**AM MT-3a. Patrol Safety Zone.** Two tugboats on standby duty would patrol Cabrillo Port's designated safety zone, except during docking and undocking operations. Dedicated personnel aboard the FSRU would monitor marine traffic. **AM MT-3b. LNG Carrier Monitoring by the FSRU.** LNG carriers inbound and outbound would be monitored by the FSRU's own marine traffic management system. Specific required reporting and traffic information exchange protocols would be implemented. Appropriate adjustments to scheduling of LNG carriers would be in place to avoid routine collision possibilities. **AM MT-3c. One LNG Carrier in Approach Route.** Only one LNG carrier would be permitted to transit the approach route at any given time (see Figure 4.3-2). Minimum distances between LNG carriers when enroute within the LNG carrier approach route would be prescribed. **AM MT-3d. Control Room Team Management Techniques.** The Applicant would ensure that all members of the control room team are aware of possible dangers of upcoming operations and would inform all crew members that it is their responsibility to bring indication of danger to the attention of higher authorities. **AM MT-3e. Broadcast of Navigational Warnings.** The	Offshore	USCG/CSLC	Pre-Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	FSRU would broadcast navigational warnings of arriving and departing LNG carriers on radio, TOR, NAVTEX, and Sat-C. **MM MT-3f. Live Radar and Visual Watch.** The Applicant shall ensure that a live radar and visual watch is maintained at all times on board the FSRU. The watch supervisor shall be an experienced and qualified officer in charge of the navigation watch and have a STCW endorsement. The watch supervisor and all watchstanding support personnel shall be qualified in accordance with the criteria outlined in Sections II and VIII of the STCW-95 Code with demonstrated proficiency in the use of all electronic navigational and communications equipment. The watchstanders shall properly operate equipment in order to detect and identify approaching vessels and note approaching aircraft at all times. The watchstanders shall provide a full-time radio watch, which shall monitor VHF-FM frequencies commonly used for emergency and normal ship-to-ship communications, and contact approaching vessels to inform them of the FSRU's location, intentions, and the nature of safety and/or security zones in effect. Guidance for these FSRU positions shall be included in the facility operations and security manuals. **MM MT-3g. Information for Navigational Charts.** The Applicant shall ensure that all required information is provided to the USCG and other agencies, as necessary, to place the FSRU location, safety zone information, and subsea pipeline locations and warnings on navigational charts. This shall include a Notice to Mariners for chart correction and inclusion on the next edition of applicable navigation charts. These data shall be provided sufficiently early to allow these changes to be made on charts when FSRU mooring occurs. The Applicant shall coordinate with the USCG to identify acceptable deadlines currently in place.			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
MT-4: *FSRU or LNG Carrier Accident Impact on Marine Traffic* An incident at the FSRU or on an LNG carrier could adversely affect marine traffic (CEQA Class II; NEPA minor adverse, short-term).	**AM PS-2a. AIS, Radar, and Marine VHF Radiotelephone** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM MT-3a. Patrol Safety Zone.** **AM MT-3b. LNG Carrier Monitoring by the FSRU.** **AM MT-3c. One LNG Carrier in Approach Route.** **MM PS-3b. Emergency Communication/Warnings** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM MT-3f. Live Radar and Visual Watch** would apply to this impact.	Offshore	USCG/CSLC	Operations
MT-5: *Temporary Interference with Operations in the Point Mugu Sea Range or the SOCAL Range Complex during Offshore Construction* Marine activities associated with site preparation, transportation, and installation of the mooring system, FSRU, or subsea pipelines could temporarily burden maritime traffic tracking systems or make clearing of some warning areas impossible; thus, temporary disruption of operations in the Point Mugu Sea Range or the SOCAL Range Complex could occur (CEQA Class II; NEPA minor adverse, short-term).	**MM MT-5a. Avoid Point Mugu Sea Range.** The Applicant shall ensure that Project-related vessels, unless such vessels are related to pipeline construction, do not intrude into the waters in the Point Mugu Sea Range. When construction must take place in a Point Mugu Sea Range warning area, such as where the subsea pipelines cross the range, the Applicant shall give notice of at least one month, and preferably six months, to the U.S. Navy to allow for adequate coordination. **MM MT-5b. Daily Safety Briefs.** The Applicant shall ensure that daily safety briefs aboard all Project vessels include instructions to avoid use of Point Mugu Sea Range waters. **MM MT-5c. Daily Coordination with the U.S. Navy.** The Applicant shall coordinate daily (or at an interval that the U.S. Navy deems sufficient) with the U.S. Navy to ensure that no conflicts exist between Navy operations and Project construction when Project vessels would be expected to be in any warning area. If a Navy warning area needs to be used by construction vessels, construction shall be postponed until the situation is resolved to the satisfaction of Project management and the U.S. Navy. Coordination	Offshore	USCG/CSLC	Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	with the U.S. Navy shall be completed at least one month prior to the date that construction begins. **MM MT-5d. Monitor U.S. Navy Securite Broadcasts.** The Applicant shall ensure that Project vessels monitor all U.S. Navy Securite warning broadcasts on VHF-FM. This would likely require switching from normally monitored frequencies, when prompted by a preliminary broadcast by the U.S. Navy, for additional information. Instructions to do so shall be included in daily safety briefs. Conflicts, actual or perceived, shall be addressed immediately by the Project person-in-charge on site, or by individual Project vessel captains via VHF communications with the U.S. Navy.			
MT-6: *Long-Term Interference with Operations in the Point Mugu Sea Range and the SOCAL Range Complex* Marine activities associated with Project operations could burden maritime traffic tracking systems or could make clearing of some warning areas impossible; thus, disruption of operations in the Point Mugu Sea Range or the SOCAL Range Complex could occur (CEQA Class II; NEPA minor adverse, long-term).	**MM MT-6a. Follow U.S. Navy Securite Broadcasts.** The Applicant shall heed U.S. Navy Securite broadcasts and coordinate with the U.S. Navy range scheduling authorities regarding LNG carrier shipments to ensure that they do not conflict with range operations. **MM MT-6b. LNG Carrier Schedules.** The Applicant shall provide long-range LNG carrier schedules in advance and master schedules at least quarterly to the U.S. Navy so that transits can be coordinated. **MM MT-6c. Coordinate with the U.S. Navy.** The Applicant shall notify the U.S. Navy range scheduling authorities when approaching LNG carriers are 24 to 48 hours from the FSRU.	Offshore	USCG/CSLC	Construction, Operations
MT-7: *Long-Term Interference with Operations at Port Hueneme* Activities associated with Project operations could increase traffic at Port Hueneme; thus, disruption of operations at Port Hueneme could occur (CEQA Class II; NEPA minor to moderate adverse, long-term).	**MM MT-7a. Project Pilots.** The Applicant shall have all masters of Project tugboats obtain an endorsement on their master's license and a pilot's license from the USCG and the Port of Hueneme Pilots Association before construction begins. **MM MT-7b. U.S. Navy Exemption.** The Applicant shall apply for an U.S. Navy exemption to the requirement that operations cease in the Port of Hueneme channel.	Offshore	USCG/CSLC	Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	MM MT-7c. Scheduling of Tug trips to the Port of Hueneme. The Applicant shall make arrangements for use of a dedicated berth and coordinate at least 48 hours in advance with the Port of Hueneme to schedule tugboat arrivals and departures such that they do not conflict with commercial fish offloading operations.			
AESTHETICS (Section 4.4)				
AES-1: *Alter Ocean Views from Onshore and Channel Islands Viewpoints* The FSRU in an unobstructed viewshed could alter views from beach areas, residences near sea level, residences at higher elevations, and from hiking trails at higher elevations (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore and Onshore	USCG/CSLC	N/A
AES-2: *Alter Nighttime Ocean Views* Night lighting on the FSRU could be visible to residents, thereby altering night vistas (CEQA Class III; NEPA minor adverse, long-term)	**AM BioMar-3a. Construction/Operation Lighting Control** would apply to this impact (see Section 4.7, "Biological Resources – Marine").	Offshore and Onshore	USCG/CSLC	Construction, Operations
AES-3: *Alter Views for Recreational Boaters* The FSRU would change the visual character of the ocean view for recreational boaters (CEQA Class I; NEPA major adverse, long-term).	None.	Offshore	USCG/CSLC	N/A
AES-4: *Alter Offshore Views from an Eligible State Scenic Highway* The FSRU would be visible to travelers on an eligible State Scenic Highway (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore and Onshore	USCG/CSLC	N/A

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AES-5: *Alter Ocean Views During Construction* Night lighting during offshore construction could be visible from the shore and to residents living in the foothills and higher elevation areas in Malibu, thereby temporarily altering the nighttime viewshed (CEQA Class III; NEPA minor adverse, long-term).	**AM BIOMAR-3a. Construction Lighting/Operation Control** applies here (see Section 4.7, "Biological Resources – Marine").	Offshore and Onshore	USCG/CSLC	Construction
AES-6: *Substantial Damage to Onshore Scenic Resources Along a State Scenic Highway* Construction of the onshore pipelines could alter the scenic qualities of a highway eligible for the State Scenic Highway System (CEQA Class III; NEPA minor adverse, long-term).	**MM GEO-1b. Backfilling, Compaction, and Grading** would apply to this impact (see Section 4.11, "Geologic Resources and Hazards").	Onshore	USCG/CSLC	Construction
AGRICULTURE AND SOILS (Section 4.5)				
AGR-1*: Temporary Loss of Agricultural Land* Construction activities could temporarily cause a loss of agricultural land, crops, or crop production (CEQA Class II; NEPA minor adverse, short-term).	**AM AGR-1a. Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative Impacts.** In compliance with California Government Code § 7267 et seq., the Applicant or its designated representative would make every reasonable effort to acquire easements (temporary and permanent) expeditiously by negotiation. The easement rights would be appraised before the initiation of negotiations, and the property owner or the property owner's designated representative would be given an opportunity to accompany the appraiser during the inspection of the property. SoCalGas would establish an amount that it believes to be just compensation for the easement rights, based upon the appraisal. SoCalGas would provide the property owner with a written statement and summary of the basis for the	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	amount it established as just compensation, which amount would not be less than the appraised value of the easement rights. The appraisal process would consider the value of the easement rights being acquired, and where applicable, crop loss, future loss of production, and any other negative impacts that SoCalGas' acquisition and use of the easement areas would have upon agricultural operations. **AM AGR-1b. Coordinate Pipeline Installation with Farmers**. The Applicant or its designated representative would schedule construction to begin immediately after harvest or before planting if the construction and planting/harvest schedules coincide closely enough to not compromise the overall pipeline construction completion schedule. The Applicant or its designated representative would let the farmer decide whether the farmer or the Applicant's contractor would remove seed/crops. **AM AGR-1c. Post-Construction Restoration Measures.** The Applicant or its designated representative would protect all substructures, such as drain tiles or other types of irrigations systems, during construction and replace any substructures if damaged. The Applicant or its designated representative would restore the grade of the TCE to match the surrounding field for drainage or compensate the farmer if the farmer chooses to have a contractor perform precision grading. **MM AGR-1d. Minimize Orchard Tree Removal.** Recognizing that no trees can grow within 15 feet (4.6 m) of the pipeline, the Applicant or its designated representative shall remove, box, maintain, and replant small orchard trees in the area between the TCE and the permanent ROW. The Applicant or its designated representative shall minimize the number of mature trees removed.			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AGR-2: *Permanent Conversion of Agricultural Land to Non-Agricultural Use* Operational activities could cause a loss of agricultural land, crops, or crop production. Construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime Farmland or Farmland of Statewide Importance could be converted to non-agricultural uses (CEQA Class I; NEPA major adverse, long-term).	None.	Onshore	USCG/CSLC	N/A
AGR-3: *Topsoil Loss, Mixing, and/or Compaction* Construction activities could result in topsoil and subsoil mixing, soil compaction, and/or introduction of weed/invasive species, thereby reducing agricultural productivity (CEQA Class II; NEPA minor adverse, short-term).	**AM TerrBio-4a. Weed Management Plan** would apply to this impact (see Section 4.8, "Terrestrial Biology"). **MM AGR-3a. Topsoil Salvage and Replacement**. The Applicant or its designated representative shall ensure that the upper 12 inches (0.3 m) of topsoil (or less, depending on the existing depth of the topsoil) is salvaged, segregated from the rest of the soil, and replaced on top of the disturbed areas and replaced wherever the pipeline is trenched. **MM AGR-3b. Landowner Compensation for Soil Productivity Losses.** Prior to construction, the Applicant or its designated representative shall negotiate with landowners regarding measures to ensure that soil productivity is maintained and that the criteria for determining loss of soil productivity and the terms for compensation for such loss are determined.	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AGR-4: *Dust Deposition* Dust generated during construction could be deposited on adjacent agricultural lands with planted crops, temporarily reducing productivity (CEQA Class II; NEPA minor adverse, short-term).	**MM AIR-2b. Construction Fugitive Dust Plan** would apply to this impact (see Section 4.6, "Air Quality"). **MM AGR-4a. Dust Suppression Water Quality.** For dust suppression, the Applicant or its designated representative shall use potable water sources or water sources approved for discharge near agricultural uses. Water used on agricultural fields shall not be treated with chemicals such that it could adversely affect agricultural fields.	Onshore	USCG/CSLC	Pre-Construction, Construction
AGR-5: *Loss of Tree Rows* Loss of tree rows could reduce agricultural productivity (CEQA Class II; NEPA minor adverse, short-term).	**MM TerrBio-2g. Tree Avoidance and Replacement** applies to this impact (see Section 4.8, "Biological Resources – Terrestrial").	Onshore	USCG/CSLC	Construction, Post-Construction
AGR-6: *Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line* If the natural gas transmission line leaked and/or were ignited, the resulting fire could cause the loss of crops or the contamination of the soil in the vicinity of the leak or fire (CEQA Class II; NEPA minor adverse, short-term).	**AM PS-3a. More Stringent Pipeline Design** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-4a. Class 3 Pipeline Design Criteria** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM AGR-6a. Restoration After a Natural Gas Transmission Line Accident.** The Applicant or its designated representative shall restore the area that was either contaminated or burned as a result of a breach in the natural gas transmission line. **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4b. Pipeline Integrity Management Program** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls** (see Section 4.2, "Public Safety: Hazards and Risk Analysis").	Onshore	USCG/CSLC	Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AGR-7 Alt: *Potential for Use of Agricultural Land for Staging Areas.* Under the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, construction activities associated with staging areas could temporarily cause a loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be temporarily converted from agricultural land to non-agricultural land. Prime Farmland or Farmland of Statewide Importance soils would temporarily be converted to non-agricultural uses (CEQA Class II; NEPA minor adverse, short-term).	**AM AGR-1a. Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative Impacts.** **AM AGR-1b. Coordinate Pipeline Installation with Farmers**. **AM AGR-1c. Post-Construction Restoration Measures.** **MM AGR-1d. Minimize Orchard Tree Removal.**	Onshore		Pre-construction, construction
AGR-8 Alt: *Permanent Conversion of Agricultural Land to Non-Agricultural Use.* Under the Arnold Road Shore Crossing/Arnold Road Pipeline Alternative, construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. The pipeline corridor could convert Prime Farmland and Farmland of Statewide Importance soils to non-agricultural uses (CEQA Class I; NEPA major adverse, long-term).	None	Onshore		N/A
AGR-9 Alt: *Potential for Use of Agricultural Land for Staging Areas.* Under the Point Mugu Shore Crossing/Casper Road Pipeline	**AM AGR-1b. Coordinate Pipeline Installation with Farmers**. **AM AGR-1c. Post-Construction Restoration Measures.** **MM AGR-1d. Minimize Orchard Tree Removal.**	**Onshore**		Pre-construction, construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Alternative, construction activities associated with staging areas could temporarily cause a loss of agricultural land, agricultural soils, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be temporarily converted from agricultural land to non-agricultural land (CEQA Class II; NEPA minor adverse, short-term).				
AGR-10 Alt: *Permanent Conversion of Agricultural Land to Non-Agricultural Use.* Under the Point Mugu Shore Crossing/Casper Road Pipeline Alternative, construction of permanent facilities could cause a permanent loss of agricultural land, crops, or crop production. Agricultural land that is preserved under the Williamson Act could be permanently converted from agricultural land to non-agricultural land. Prime Farmland and Farmland of Statewide Importance soils could be converted to non-agricultural uses. (CEQA Class I NEPA major adverse, short-term).	None.	Onshore		N/A
AIR QUALITY (Section 4.6)				
Offshore				
AIR-1: *Net Emission Increases of Criteria Pollutants from Construction Activities in Designated Nonattainment Areas* Project construction activities in Ventura and Los Angeles counties would generate emissions that exceed quantitative thresholds for ozone precursors (NO_x and	**AM AIR-1a. USEPA Nonroad Engine Standards.** At a minimum, all onshore construction equipment would utilize engines compliant with USEPA Tier 2 nonroad engine standards. To the extent possible, onshore equipment would utilize engines compliant with USEPA Tier 3 or 4 nonroad engine standards. **AM AIR-1b. Offshore Construction Equipment**	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
ROCs) and CO (CEQA Class I; NEPA major adverse, short-term).	**Standards.** All vessels (and associated offshore equipment) used during shore crossing construction, offshore pipeline installation, and mooring/FSRU installation, would utilize only engines that emit CO, PM, NO_x, and ROC at rates less than or equal to USEPA Tier 1 nonroad engine standards (as outlined in 40 CFR 89.112, Table 1). **AM AIR-1c. Ultra Low Sulfur Diesel.** All Project operational vessels (including LNG carrier, tugs, and crew boat), FSRU equipment, and construction vessels and equipment would be fueled with ultra low sulfur diesel (less than 15 parts per million sulfur). This is consistent with California regulations (starting January 2007) that require that the sulfur content of all vehicular diesel fuel and non-vehicular diesel fuel supplied in California (including fuel for locomotives and harborcraft) not exceed 15 parts per million by weight. As it is anticipated that some of the operational and construction vessels/equipment would be transported from outside of California, this measure applies to vessels regardless of place of origin. **MM AIR-1d. Gasoline-Fueled Equipment.** The Applicant or its designated representative shall use only gasoline-fueled equipment that meets the exhaust emission standards for CO and NO_x (as listed for engine displacements greater than 1.0 liter) outlined in 13 CCR § 2433: Exhaust Emission Standards and Test Procedures – Off-Road Large Spark-Ignition Engines. **MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards.** All onshore construction equipment with a rating between 100 and 750 hp would be required to utilize engines compliant with USEPA Tier 3 nonroad engine standards. **MM AIR-1f. Construction Emissions Reduction Plan.** The Applicant shall prepare a Construction Emissions Reduction Plan to be incorporated into all contracts and			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	contract specifications for construction work. This plan shall specify all Applicant measures and mitigation measures related to construction equipment emission standards/controls as contractual requirements. The plan shall also outline additional specific measures, as contractual requirements, to reduce or eliminate potential impacts associated with construction-related emissions of criteria air pollutants and toxic air contaminants. At a minimum, the plan shall include the following additional specific measures: • As feasible, reduce emissions of particulate matter and other pollutants by using alternative clean fuel technology such as electric, hydrogen fuel cells, and propane-powered equipment or compressed natural gas-powered equipment with oxidation catalysts instead of gasoline- or diesel-powered engines. • Ensure that all construction equipment is properly tuned and maintained and shut off when not in direct use; • Prohibit engine tampering to increase horsepower; • Locate engines, motors, and equipment as far as possible from residential areas and at least 300 feet (91 m) from sensitive receptors, such as schools, daycare centers, and hospitals (Note: the proposed pipeline routes would not pass within 300 feet [91 m] of any sensitive receptor locations); • Provide carpool shuttles and vans to transport construction workers to and from construction sites, thus eliminating some private vehicle trips; • Arrange for food catering trucks to visit each Project site twice a day; • Reduce construction-related trips of workers and equipment, including trucks; and • Require that on-road vehicles be less than 10 years old.			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Prior to finalization of the plan, the Applicant shall also consult with the VCAPCD and the SCAQMD to identify other potential control measures not specified above. The Applicant or its designated representative shall submit this plan and related construction contract specifications to the California States Land Commission (CSLC), USEPA, and, to the extent applicable under local rules and regulations, the VCAPCD and the SCAQMD, prior to construction activities. **MM AIR-1g. Construction Equipment Documentation.** The Applicant or its designated representative shall prepare and maintain documentation that demonstrates implementation of the Applicant's proposed emission reduction measures and required mitigation measures. The following documents and/or files shall be submitted to the CSLC, USEPA, and, to the extent applicable under local rules and regulations, the VCAPCD and the SCAQMD: • Inventory of all equipment and vessels used during each onshore and offshore construction activity. At a minimum, this inventory shall include an equipment description, equipment identification, identification of type of engine(s), and engine emission data; and • Documentation certifying that the actual emission rates for the engine(s) of each equipment and vessel used during construction comply with mitigation measures and applicant measures as required. This documentation shall include USEPA or CARB certification of engine emissions, source testing results for specific engines, or an equivalent means of certifying emission rates of NO_x, CO, ROC, and PM_{10} from this equipment.			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AIR-2*: Violations of Ambient Air Quality Standards Caused by Particulate Emissions from Onshore Construction Activities* Onshore Project construction activities would generate PM_{10} and $PM_{2.5}$ emissions that could cause or contribute to existing or projected violations of NAAQS and/or State Ambient Air Quality Standards (CEQA Class I; NEPA major adverse, short-term).	**AM AIR-2a. Fugitive Dust Controls.** The Applicant or its designated representative would provide for the following control measures: • Excavation and spoils would be watered down; • Spoil piles that remain more than a few weeks would be covered with tarps; • Water trucks would be used for dust suppression; and • Disturbed areas not covered with surface structures, such as buildings and pavements, would be stabilized following construction activities. This stabilization may involve planting these areas with suitable vegetation to minimize future on-site soil loss and off-site sedimentation. **MM AIR-2b. Construction Fugitive Dust Plan**. The Applicant or its designated representative shall be required to develop, and submit to the VCAPCD and the SCAQMD for approval, a Construction Fugitive Dust Control Plan prior to the commencement of construction activities. The plan shall be incorporated into all contracts and contract specifications for construction work. At a minimum, the control measures specified in the plan shall include Applicant measures and conform to all applicable requirements of SCAQMD Rule 403 (as listed for large construction operations) in both Ventura and Los Angeles counties. The plan shall outline the steps to be taken to minimize fugitive dust generated by construction activities by: • Describing each active operation(s) that may result in the generation of fugitive dust; • Identifying all sources of fugitive dust, e.g., earth moving, storage piles, vehicular traffic; and • Describing the control measures to be applied to each of the sources of dust emissions identified above. The	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	descriptions shall be sufficiently detailed to demonstrate that the best available control measure(s) required by the SCAQMD and the VCAPCD for linear projects will be used and/or installed during all periods of active operations. • Stipulating the use of the following control measures, in addition to or as listed in SCAQMD Rule 403, such as, but not limited to: – Use of street sweeping and trackout devices at all construction sites. – Frequent watering or stabilization of excavation, spoils, access roads, storage piles, and other sources of fugitive dust. – Installing temporary coverings on storage piles when not in use. – Pre-watering of soils prior to trenching. – Dedicating water truck or high-capacity hose to any soil screening operations. – Minimizing drop height of material through screening equipment. Due to potential exceedances of applicable air quality standards, this plan shall also identify specific methodologies for taking "real-time" measurements of PM_{10} and $PM_{2.5}$ ambient concentrations at locations along the boundary of the proposed construction areas. The plan shall include a description of "action levels" for these measurements and the corresponding steps to be taken, e.g., increase watering to reduce ambient particulate concentrations. The specified monitoring methodologies included in this plan must meet the approval of the VCAPCD and the SCAQMD. The Applicant or its designated representative shall submit this plan and related construction contract specifications to the CSLC, the USEPA and, to the extent applicable under local rules and			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	regulations, the VCAPCD and the SCAQMD. The Applicant or its designated representative shall obtain prior approval from the SCAQMD or the VCAPCD prior to any deviations from fugitive dust control measures specified in the Construction Fugitive Dust Plan. A justification statement used to explain the technical or safety reason(s) that preclude the use of required fugitive dust control measure(s) shall be submitted to the appropriate agency for review. **MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards** would apply to this impact. **MM AIR-1f. Construction Emissions Reduction Plan** would apply to this impact. **MM AIR-1g. Construction Equipment Documentation** would apply to this impact.			
AIR-3: *Violations of Ambient Air Quality Standards, Exposure of the Public to Substantial Pollutant Concentrations, and/or Creation of Objectionable Odors Caused by an Accidental LNG Spill or Pipeline Rupture* Although rare, an LNG spill from the FSRU or a pipeline rupture would result in a natural gas release and/or a fire that could cause temporary increases in ambient air concentrations of criteria pollutants in excess of air quality standards, expose sensitive receptors and the general public to substantial concentrations of toxic air contaminants, and/or create objectionable odors (CEQA Class I; NEPA moderate adverse, short-term).	**AM PS-3a. More Stringent Pipeline Design** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-4a. Class 3 Pipeline Design Criteria** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-3c. Areas Subject to Accelerated Corrosion, Cathodic Protection System** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4d. Treat Shore Crossing as Pipeline HCA** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4e. Safety Marker Indicating the Presence**	Onshore and Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	of Buried Natural Gas Pipeline at Ormond Beach would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4f. Emergency Response** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-5a. Treat Manufactured Home Residential Community as a High Consequence Area** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis").			
***AIR-4**: Emissions of Ozone Precursors from the FSRU* Emissions of NO_x and ROC generated from FSRU equipment could contribute to ambient ozone impacts in the areas located downwind of the Project (CEQA Class II; NEPA minor adverse, long-term).	**AM AIR-4a. Emissions Reduction Programs.** As part of air permit-to-construct application procedures, the Applicant has committed to the USEPA to achieve emissions reductions (in addition to reductions inherent to the Project) to an amount equal to the FSRU's annual NO_x emissions. The Applicant has executed contracts to retrofit two marine vessels (long haul tugs) by replacing the propulsion engines of each vessel with modern low emitting engines (Tier 2 compliant diesel-fired engines). At the request of the USEPA and the CARB, the Applicant conducted source testing to assist in determining the emission reductions expected as a result of the retrofits. The Applicant estimated that the repowering of two tugs could result in emission reductions of approximately 165.5 tons per year of NO_x. In a memorandum from the CARB to the CSLC dated February 9, 2007, the CARB outlined the apportionment of the estimated NOx emission reductions based on the anticipated tug operations within the following regions:	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Local Air District / *Emission Reductions (tons per year)* SCAQMD 47.4 VCAPCD 16.8 Santa Barbara County APCD 35.6 San Luis Obispo County APCD 15.2 Monterey Bay Unified APCD 25.4 Bay Area AQMD 25.1 ***TOTAL 165.5*** The CARB reviewed the methodology used to calculate the estimated emission reductions and found it to be reasonable. However, the CARB indicated that "there is not yet a consensus on the estimated emission reductions from the mitigation proposal and that the USEPA's estimates are less than those presented here" (Fletcher 2007). The CARB memorandum is provided as Appendix G9. The USEPA conducted its own review of the retrofit projects; based on the information submitted by the Applicant, the USEPA determined that the following emission reductions can be expected along the routes traveled by the tugs: *Local Air District* / *Emission Reductions (tons per year)* SCAQMD 33.15 VCAPCD 11.47 Santa Barbara County APCD 25.11 San Luis Obispo County APCD 10.84 Monterey Bay Unified APCD 18.09 Bay Area AQMD 17.99 ***TOTAL 116.65***			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Thus, the USEPA's estimate for NO_x reductions (116.65 tons per year) is less than the Applicant's estimate of NO_x reductions (165.5 tons per year) by a value of 48.85 tons per year. Further, the CARB staff question the appropriateness of counting the emission reductions in the Bay Area since these reductions would likely not benefit the regions where the Project is located. Excluding the Bay Area emissions would reduce the amount of emission reductions by 25.1 tons per year based on estimates from the Applicant (or 17.99 tons per year based on estimates from the USEPA).			
AIR-5: *Emissions of Ozone Precursors from Project Vessels Operating in California Coastal Waters* Emissions of NO_x and ROC generated from LNG carriers, tugboats, and the crew/supply boat operating in California Coastal Waters could contribute to ambient ozone impacts in the areas located downwind of the Project (CEQA Class I; NEPA major adverse, long-term).	**AM AIR-5a. Natural Gas on LNG Carriers.** The Applicant would use natural gas as the primary fuel in LNG carrier engines whenever these vessels are berthed at the FSRU and/or operating within California Coastal Waters. A small amount of ultra low sulfur diesel would be used simultaneously as a pilot fuel in LNG carrier engines resulting in a fuel mixture with a natural gas-to-diesel ratio of approximately 99 to 1. All LNG carriers that deliver LNG to the FSRU would be powered exclusively by Wartsila 50DF series dual-fuel electric engines or equivalent dual-fuel electric engines. **AM AIR-5b. Control Equipment on Support Vessels.** The Applicant would use ultra low sulfur diesel as the fuel in the engines on the tugboats and crew/supply boat. The diesel engines on these vessels would be fitted with pollution control equipment including SCR, oxidation catalysts, and particulate filters to reduce emissions. The Applicant assumed a NO_x control efficiency of 80 percent in developing its emission inventories. The Applicant also expects CO and ROC reductions of 70 percent and 40 percent, respectively. The use of this control equipment would result in emissions comparable to or less than emissions from natural gas-fueled engines.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	MM AIR-5c. Documentation of Engine Specifications. The Applicant shall prepare and maintain documentation that demonstrates implementation of the Applicant's emission reduction measures. The following documents and/or files shall be submitted to the USCG, CSLC, and CARB: • Final design documents for the Project crew/supply boat and tug engines, including engine specifications, air pollution control equipment specifications, and associated manufacturer/vendor emission data. • Documentation certifying that the actual emission rates for the Project crew/supply boat and tug engines are less than or equal to the "controlled" emission rates, in grams per kilowatt-hour, reported for these vessels and documented in Appendix G2. This documentation shall include a report summarizing emission testing of the newly constructed Project crew/supply boat and tug engines for NO_x, CO, ROC, and PM_{10}. • Contract documents between the Applicant or its designated representative and LNG carrier operators that specify that all LNG carriers are powered exclusively by Wartsila 50DF series dual-fuel electric engines or equivalent dual-fuel electric engines. Equivalent air emission rates will be defined in grams per kilowatt-hour. • Documentation of all LNG carriers that berth at the FSRU, which at a minimum, will include the vessel name, country of origin, engine power plant description, diesel specifications, and emission certifications.			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
AIR-6: *Emissions of Ozone Precursors from Project Construction Activities in Federal Waters* Project construction activities in Federal waters would generate emissions of NO_x and ROCs that could contribute to ambient ozone impacts in the areas located downwind of the Project (CEQA Class III; NEPA minor adverse, short-term).	**MM AIR-1f. Construction Emissions Reduction Plan** would apply to this impact. **MM AIR-1g. Construction Equipment Documentation** would apply to this impact.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction
AIR-7: *Temporary Ambient Air Quality Impacts Caused by Criteria Pollutant Emissions from Onshore and Offshore Construction Activities* Air pollutants emitted during onshore and offshore Project construction activities would cause temporary increases in ambient pollutant concentrations (CEQA Class III; NEPA minor adverse, short-term).	**MM AIR-1f. Construction Emissions Reduction Plan** would apply to this impact. **MM AIR-1g. Construction Equipment Documentation** would apply to this impact.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction
AIR-8: *Ambient Air Quality Impacts Caused by Air Pollutant Emissions from the FSRU and Project Vessels* Air pollutants emitted from FSRU equipment and Project vessels associated with operations would cause increases in ambient pollutant concentrations (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore and Onshore	USCG/CSLC	N/A
AIR-9: *Temporary Ambient Air Quality Impacts Caused by Air Toxic Pollutant Emissions from Onshore and Offshore Construction Activities* Air toxic pollutants emitted during onshore and offshore Project construction activities would cause temporary increases in	**MM AIR-1e. USEPA Tier 3 Nonroad Engine Standards** would apply to this impact. **MM AIR-1f. Construction Emissions Reduction Plan** would apply to this impact. **MM AIR-1g. Construction Equipment Documentation** would apply to this impact.	Offshore and Onshore		Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
ambient pollutant concentrations (*CEQA* Class II; NEPA minor or moderate adverse, short-term).				
MARINE BIOLOGY (Section 4.7)				
BioMar-1*: Burial of Sessile Marine Biota* Construction activities associated with pipeline and mooring installation could temporarily disturb soft substrate sediments and could bury or crush sessile marine biota such as benthic invertebrates (CEQA Class III; NEPA minor adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
BioMar-2: *Temporary Avoidance of the Area Due to Increased Turbidity from Construction Activities Offshore or Accidental HDB Release of Drilling Fluids* A release of drilling fluids and bentonite into the subtidal environment during HDB could temporarily increase turbidity. Increases in turbidity at the offshore exit point could cause fish to avoid this area and could cause adverse impacts on special status species and EFH (CEQA Class II; NEPA minor adverse, short-term).	**MM WAT-3a. Drilling Fluid Release Monitoring Plan** would apply to this impact (see Section 4.18, "Water Quality and Sediments," and Appendix D1).	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction
BioMar-3: *Temporary or Permanent Alteration or Disturbance of Marine Biota or Sensitive Habitats, including EFH.* Construction and/or operational activities could affect marine biota or alter EFH or sensitive habitats (beach spawning areas or hard bottom substrate), resulting in cessation or reduction of feeding or	**AM BioMar-3a. Construction/Operations Lighting Control.** A plan would be developed in consultation with a marine bird expert and submitted for approval by the USCG and the CSLC at least 60 days prior to construction. The plan would include the following lighting restrictions: • Limit lighting used during construction and operation activities to the number of lights and wattage necessary to perform such activities;	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
reproduction, area avoidance, or changes in migration patterns for both non-threatened and endangered and special status species (CEQA Class II; NEPA moderate or major adverse, short- or long-term).	• Extinguish all lights used for that activity, once an activity has been completed; • Shield lights so that the beam falls only on the workspace and so that no light beams are *directly* visible more than 3,281 feet (1000 m) distant; and • Limit lights shining into the water to the area immediately around the vessels, except that searchlights may be used when essential for safe navigation, personnel safety, or for other safety reasons. Lights required by the USCG or for safety purposes would be used in accordance with Federal regulations and would not be subject to the restrictions listed above. **AM NOI-4a. Construction Noise Reduction Measures** would apply to this impact (see Section 4.14, "Noise and Vibration"). **MM BioMar-3b. Monitoring.** If intertidal beach work occurs between February and September, the Applicant shall ensure that a qualified biologist will monitor the beach within 100 feet (30.5 m) of the route during the two weeks prior to installation. If a grunion spawning event occurs during the two weeks prior to construction activities, installation will be delayed until the grunion eggs have hatched (approximately two weeks). A qualified biologist shall determine the day in which construction can begin again after the spawning event. **MM BioMar-3c. Avoidance.** Although recent surveys of the Project site have not identified any hard bottom areas, the Applicant shall ensure that any unexpected hard bottom habitats encountered during construction will be avoided. **MM NOI-1a. Efficient Equipment Usage** would apply to this impact (see Section 4.14, "Noise and Vibration").			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
BioMar-4: *Construction or Operation Vessels Act as an Attractive Nuisance or Disrupt Marine Mammal Behavior or Migrations* Construction or operational activities could alter sensitive habitats such that marine mammal reproduction could be reduced, prey species could be eliminated, or animals might avoid an area (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	None.	Offshore	USCG/CSLC	N/A
BioMar-5: *Noise Disrupting Marine Mammal Behavior* Noise from construction and operation vessels or equipment could disrupt migrations; interfere with or mask communications, prey and predator detection, and/or navigation; cause adverse behavioral changes; or result in temporary or permanent hearing loss (CEQA Class I; NEPA major adverse, long-term).	**AM BioMar-9a**. **Avoid Offshore Construction during Gray Whale Migration Season** would apply to this impact. **AM BioMar-9b. Marine Mammal Monitoring** would apply to this impact. **MM BioMar-5a. Noise Reduction Design.** The Applicant shall work with marine architects, acoustic experts and mechanical engineers and the USCG, among others, to design the FSRU and its equipment to reduce, to the maximum extent feasible, the output of cumulative noise from the facility. **MM BioMar-5b. Acoustic Monitoring Plan.** The Applicant shall prepare an acoustic monitoring plan to obtain site-specific baseline data and empirical data prior to and during LNG operations. The tasks involved in the acoustic monitoring plan are described below. These tasks will be performed by independent, third-party monitors qualified for such tasks and approved in advance by the appropriate regulatory agencies, such as USFWS, NOAA (NMFS), and CDFG. • Obtain pre-construction, site-specific data on the presence, species composition, abundance, frequency, and seasonality of marine mammals specific to the Project site (twice-monthly aerial line transect surveys	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	for one to two years). • Obtain seasonal conductivity (density/salinity), temperature, and depth measurements at the Project site before construction begins. Concurrently, measure levels of natural ambient sound at the sampled depths in a variety of sea states, provided that sea conditions are not so severe that they compromise the ability to obtain good data (sound pressure level recordings). Also, measure sounds of various vessels as they pass the Project site in the nearby shipping lane (sound pressure level recordings four times a year for one to two years). • Take empirical measurements of operational sound at various depths, distances and directions from the Project site (sound pressure level recordings). Obtain seasonal conductivity (density/salinity), temperature, and depth measurements at all sampling stations. Take measurements during cold and warm water influxes. Measurements will be taken of the LNG carrier and tugs berthing and leaving FSRU; the LNG carrier attendant vessels; all operational modes of FSRU, support vessels, and helicopters during normal operations; and pipeline noise. • Document behaviors of marine mammals exposed to operational noise (passive tracking and observations four times a year for one to two years). Concurrently, measure sound levels from Project operations received by the marine mammals (sound pressure level recordings). • Evaluate acoustic monitoring results against NOAA Fisheries (NMFS)-accepted sound thresholds as results become available. In consultation with regulators, make recommendations as to whether noise levels can be reduced and whether continued or future monitoring is necessary.			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	MM BioMar-5c. Helicopter Altitude. The Applicant shall ensure that helicopters maintain a flight altitude of at least 2,500 feet (762 m), except during takeoff and landing**.** **MM NOI-1a. Efficient Equipment Usage** would apply to this impact (see Section 4.14, "Noise and Vibration").			
BioMar-6: *Mortality and Morbidity of Marine Biota from Spills* Although rare, an accidental release of a significant amount of oil or fuel during construction or operation, or LNG spills or a natural gas leak from subsea pipelines, could cause morbidity or mortality of marine biota, including fish, invertebrates, seabirds, and special status species such as sea turtles, through direct contact or ingestion of the material (CEQA Class I; NEPA major adverse, long-term).	**AM PS-1a. Applicant Engineering and Project Execution Process** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1c. Periodic Inspections and Surveys by Classification Societies** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1d. Designated Safety Zone and Area to be Avoided** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM MT-3a. Patrol Safety Zone** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM PS-1e. Cargo Tank Fire Survivability** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-1f. Structural Component Exposure to Temperature Extremes** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-1g. Pre- and Post-Operational HAZOPs** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis").	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
BioMar-7: *Discharge of Bilge Water, Gray Water, and Deck Runoff* An accidental discharge of untreated bilge water, gray water, or deck runoff from the FSRU or from the LNG carriers could result in the release of contaminants into the marine environment. A release of contaminants could cause mortality or morbidity of fish and/or benthic communities, and would have the potential to adversely affect special status species (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	None.	Offshore	USCG/CSLC	N/A
BioMar-8: *Release of LNG, Natural Gas, Fuel, or Oil Causes Injury or Mortality of Marine Mammals* A release of LNG, natural gas, fuel, or oil could cause injury or mortality of marine mammals through direct contact or ingestion of the material, and would have the potential to adversely affect special status species (CEQA Class I; NEPA major adverse, long-term).	**AM PS-1a. Applicant Engineering and Project Execution Process** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1b. Class Certification and a Safety Management Certificate for the FSRU** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1c. Periodic Inspections and Surveys by Classification Societies** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM PS-1d. Designated Safety Zone and Area to be Avoided** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **AM MT-3a. Patrol Safety Zone** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM PS-1e. Cargo Tank Fire Survivability** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-1f. Structural Component Exposure to Temperature Extremes** would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis").	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	MM PS-1g. Pre- and Post-Operational HAZOPs would apply to this impact (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM MT-3f. Live Radar and Visual Watch** would apply to this impact (see Section 4.3, "Marine Traffic").			
BioMar-9: *Collision between Project Vessels and Marine Mammals or Sea Turtles* Construction and operational vessels could collide with marine mammals or sea turtles or other special status species resting on the ocean surface, resulting in injury or mortality (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	**AM BioMar-9a. Avoid Offshore Construction During Gray Whale Migration Season.** The Applicant would conduct offshore construction activities outside the gray whale migration season (June 1 through November 30). **AM BioMar-9b. Marine Mammal Monitoring**. All construction vessels would carry two qualified marine monitors and all operational vessels would carry one qualified marine monitor to provide a 360-degree view and watch for and alert vessel crews of the presence of marine mammals and sea turtles during construction activities. Additionally, the following actions would be implemented, and the following information would be made available to all vessel operators associated with the Project and posted in the pilot house: • The monitors would receive training from a qualified independent marine wildlife mitigation firm approved in advance by NOAA Fisheries and USFWS, in consultation with the CDFG. The training would enable monitors to identify marine mammal and sea turtle species and to understand their behaviors, seasonal migrations, and the importance of avoiding them. • All monitors would be familiar with the mitigation measures described in the Marine Mammal Monitoring Protocol and in the Final EIS/EIR for the Project and would have a copy of these measures during monitoring. These measures spell out the specific responsibilities of the monitors and Project personnel. • Monitors would have the authority to stop work until monitors determine there is no longer a threat and/or	Offshore	USCG/CSLC	Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	the animal(s) transits the area if a marine mammal or sea turtle approaches the 100-yard (91.4 m) safety zone or the monitors determine that the Project operations have the potential to threaten the health or safety of marine wildlife or "take" a protected species as defined by regulations implementing the ESA and MMPA. • While on watch, monitors would have no other duty than to observe marine mammals and sea turtles. Monitors would be on duty 24 hours a day unless the vessel is in harbor or anchorage. Watches would be divided according to the ships' schedules, but in no event would a monitor stand a total of more than 12 hours of watches during any 24-hour period. The Applicant may engage trained third-party observers, may utilize trained crew members, or may use a combination of both third-party and crew observers. During observations, monitors would follow the guidelines in MMS Notice to Lessees NTL No. 2004-G01 for visual observers regarding scheduled time on and off duty while engaged as a monitor, not to exceed more than four consecutive hours on watch as an observer. • Monitoring would be conducted during all construction activities and as each vessel travels to and from the construction site. Supply, support, and crew vessels traveling to and from the Project site during operation also would be monitored. The Applicant would meet the same requirements as other marine vessels during operations. • Each monitor would maintain watch for marine mammals and sea turtles at all times while each vessel is under way. If any whales are observed, the monitor would request the vessel operator to employ the following procedures:			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	- Do not approach whales or any threatened or endangered wildlife closer than 1,000 feet (305 m). - Approach whales from the side or rear on a parallel course. - Do not cross directly in front of the whales. - Maintain the same speed as the whales. - Do not attempt to herd or drive any whales. - If a whale exhibits evasive or defensive behavior, stop the vessel until the whale has left the immediate area. - Do not come between or separate a mother and its calf. In addition, qualified independent monitors, approved in advance by NOAA Fisheries and the USFWS in consultation with the CDFG, would be aboard the pipelaying vessel while it is deployed at the Project site. The monitors would: - Establish and maintain communications with the vessel operator at all times. - Be positioned so that a 360-degree view is maintained. - Be on watch during all pipelaying operations, day or night. - Use night vision or low-light binoculars in reduced light. - If a collision appears likely, reduce the speed of the vessel as quickly and as much as possible and engage propulsion machinery only when necessary to maintain position. - If a collision is likely, take up observation position and require available crew aboard the ship to take up observation positions to help report sightings to			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	the monitor so that appropriate actions can be taken to avoid collision. In the unlikely event that a whale is injured, the operator would immediately notify: - Stranding Coordinator, NOAA Fisheries, Long Beach (562-980-4017) - Enforcement Dispatch Desk, CDFG, Long Beach (562-590-5133) - Environmental Planning and Management, CSLC, Sacramento (916-574-1890) - Santa Barbara Marine Mammal Center (805-687-3255) A detailed written report would be prepared by the monitor and dispatched to NOAA Fisheries, USFWS, the CDFG, and the CSLC. A final report summarizing the monitoring activities for the Project would also be provided to the above-mentioned agencies within 60 days of the conclusion of offshore facilities construction. Monthly reports would be prepared by the monitor summarizing marine mammal sightings and any steps taken to avoid adverse impacts.			
BioMar-10: *Entanglement of Marine Mammals, Sea Turtles and Other Special Status Species.* Marine mammals or sea turtles or other special status species could become entangled in construction or operation equipment, causing injury or mortality. (CEQA Class II; NEPA moderate or major adverse, short- or long-term)	**AM BioMar-9b. Marine Mammal Monitoring** would apply to this impact. **MM BioMar-10a. Deployment of Potentially Entangling Material.** The Applicant shall ensure that the vessel operator deploys any material that has the potential for entangling marine mammals or sea turtles only for as long as necessary to perform its task, and then immediately removes such material from the Project site. Possible slack shall be taken out of any material that could cause entanglement unless such slack is necessary to allow for currents, tides, and other factors. In the unlikely event that an entanglement appears likely, the marine mammal	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	monitor shall request the operator to remove all material that could cause entanglement, if possible, and to take up as much slack as possible in material that cannot be immediately removed. Temporary mooring buoys shall be positioned with heavy steel cables or chains to minimize potential entanglements. Mooring lines shall be used only when vessels are moored and shall not be left on mooring buoys when not in use. **MM BioMar-10b. Notification.** In the unlikely event that a marine mammal or sea turtle is entangled, the Applicant shall require the vessel operator to immediately notify the stranding coordinator at NOAA Fisheries in Long Beach (562-980-4017) and the Santa Barbara Marine Mammal Center (805-687-3255) so that a rescue effort may be initiated.			
BioMar-11: *Discharge of Ballast Water Potentially Containing Exotic Species* A release of ballast water containing exotic species could introduce exotic species that directly compete with native organisms, affecting the viability of native species, including special status species (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	None.	Offshore	USCG/CSLC	N/A
BioMar-12: *Increase/Decrease in Fish Abundance or Commercially Important Benthic Species.* Commercially important fish species could potentially avoid the Project site due to increased human activity and Project-related noise. Additionally, fish and other benthic species could be attracted to the low relief habitat provided by the subsea pipeline, decreasing abundance in other	None.	Offshore	USCG/CSLC	N/A

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
heavily fished areas (CEQA Class III; NEPA moderate or major or adverse or beneficial, short- or long-term).				
TERRESTRIAL BIOLOGY (Section 4.8)				
TerrBio-1: *Temporary Increase in Sedimentation* Construction activities could cause a temporary increase in sedimentation and soil erosion and expose contaminated soils during trenching activities, which could cover or damage plants, including special status species. The HDB procedures to install the pipelines beneath Ormond Beach may present remote potential for drilling fluid seepage. These construction methods could cause habitat degradation for sensitive and special status plant species or wetlands (CEQA Class II; NEPA minor adverse, short-term).	**AM TerrBio-1a. Erosion Control.** To minimize sedimentation, the Applicant or its designated representative would implement the following measures during construction: • Clearing of vegetation would be confined to the minimal area needed to conduct the construction activities. • Any work near or adjacent to any stream, wetland, or waterway would be protected by installing erosion-control fencing or other devices such as hay bales, straw rolls, matting, or mulch. • Work near or in waters of the United States would be conducted in a manner that minimizes turbidity, erosion, and other water quality impacts regulated by resource agencies. • Any construction debris that may be stored near or adjacent to streams or other waterways would be contained to prevent any erosion into the adjacent streams or waterways. • Construction equipment would be stored and maintained at least 50 feet (15.2 m) from streams or other waterways. • At the completion of construction activities, disturbed soils would be stabilized and erosion-control fencing would remain until restoration activities ensure that soil is properly stabilized. • BMPs would be incorporated into the construction activities. **MM TerrBio-1b. Spill Containment/Management.** The Applicant or its designated representative shall implement	*Onshore*	USCG/CSLC	*Pre-Construction, Construction, Operations*

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	the following measures to control and manage spills: • When working near waterways, the contractor shall have an emergency spill containment kit to contain and remove spilled fuels and hydraulic fluids. • When feasible, equipment and vehicles shall be fueled and maintained in a designated Maintenance and Staging Area. Equipment refueling or storage of hazardous or petroleum materials shall not occur within 100 feet (30.5 m) of sensitive habitat, wetlands, beaches, streams, or other waterways. If a 100-foot (30.5-m) buffer is not feasible for a given refueling activity, secondary containment shall be employed during the fuel transfer, and the transfer shall be continuously monitored to prevent accidental spills. • If a designated area is not available, construction equipment shall be stored and maintained at least 100 feet (30.5 m) from any jurisdictional stream channel, or as far away as available space allows in the ROW corridor. If this is not feasible at a particular crossing location because of space limitations or equipment breakdown, the Applicant shall implement BMPs to ensure that equipment, fuel, and spoils do not enter the stream channel. Appropriate BMPs include safety fencing, secondary containment for fuel tanks and fuel transfers, drip pans, spill kits, and proper disposal of waste products. • All contaminated soils and materials shall be excavated and removed from the site and disposed of appropriately to prevent sensitive animal species from becoming exposed to or killed by the effects of fuel, oil, or other chemicals used during construction. **MM WAT-3a. Drilling Fluid Release Monitoring Plan** would apply here (see Section 4.18, "Water Quality and Sediments").			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	MM WAT-4a. Strategic Location for Drilling Fluids and Cuttings Pit would apply here (see Section 4.18, "Water Quality and Sediments").			
TerrBio-2: *Temporary or Permanent Impacts Regarding Construction, Operation, and Maintenance Effects on Rare and Special Status Plants* Upland vegetation removal during onshore pipeline construction, maintenance, and repair activities could result in the loss of special status plants (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	**AM TerrBio-2a. Additional Pre-Construction Plant Surveys**. The Applicant or its designated representative would conduct additional pre-construction surveys to further define the location of special status plants identified during the spring and summer 2005 surveys. The surveys would be conducted according to survey protocols established by the USFWS or the CDFG. These surveys would occur prior to initiation of construction activities. The surveys would be conducted at the appropriate time of year in order to confirm the presence or absence of special status plants occurring within the Project area. Results of the additional surveys would supplement the existing data and would be used to map sensitive areas for avoidance during construction. Any future maintenance activities would require new surveys and consultation with the USFWS and/or the CDFG prior to ground disturbance. If listed plants were identified in the construction areas, the Applicant would comply with the terms and conditions in the Biological Opinion (BO) for the Project. Sensitive resources near construction areas would be identified and clearly marked for avoidance. Taking of Federal- or State-listed species would be avoided or would be consistent with appropriate permits and the terms and conditions in the BO. Additional measures that would be undertaken include the following: • Delineation of habitat for special status species would be conducted by a qualified botanist. Flagging, mapping, and fencing would be used to protect any special status plants within 200 feet (61 m) of the ROW. • Any special status plants within the 80-foot (24.4 m)	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	ROW, work areas, access roads, and staging areas would be flagged, mapped on construction plans, and fenced to protect the area during construction. • A biological monitor would supervise installation of construction fencing, and appropriate buffer distances would be determined. The monitor would have the authority to require installation of silt fencing in highly sensitive areas or under certain conditions where erosion could impact a special status plant or its habitat. • If sensitive resources cannot be avoided, no work would be authorized until the appropriate resource agencies (CDFG and USFWS) determine that the action would not result in significant biological impacts. **AM TerrBio-2b. Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP).** Additional surveys would be conducted within any areas potentially impacted by Project activities during construction or operation where special status plant species potentially occur. Surveys would be conducted in consultation and coordination with agencies and according to any existing species-specific protocols. Results of the surveys would be used to develop a BRMIMP. The Applicant's proposed mitigation measures to address construction and maintenance effects on special status plant species include implementation of a BRMIMP. It would identify: • All biological resources mitigation, monitoring, and compliance conditions specified in any permits acquired for the Project; • All sensitive biological resources to be impacted, avoided, or mitigated by Project construction, operation, and closure; • All required mitigation measures/avoidance strategies for each sensitive biological resource; • All locations, on a map of suitable scale, of laydown			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	areas and areas requiring temporary protection and avoidance during construction; • All natural areas disturbed during Project construction activities in pre- and post-construction photographs; • Duration of biological monitoring and a description of monitoring methodologies and frequency; • Success criteria for proposed mitigation; and • Remedial measures to be implemented if success criteria are not met. The Applicant's measures for the BRMIMP would include the following: • Measures to avoid special status wildlife and plants and their habitats during pipeline construction, operations, and maintenance, including restrictions in sensitive coastal areas, mapping, and avoidance of sensitive resources; • Measures to protect nesting birds under the Migratory Bird Treaty Act, including avoiding construction activities during the breeding season. If construction cannot avoid the breeding season, pre-construction surveys for nests would occur per CDFG protocols; any nest found within the construction area would be subject to CDFG buffer and monitoring requirements and would require consultation with the CDFG; • Restoration of sensitive vegetation types (coastal and riparian) potentially impacted during pipeline installation or repair, in accordance with other relevant mitigation measures; • Inclusion of measures in an Operation and Maintenance Plan to avoid and minimize impacts on special status wildlife, plants, bird nesting areas, and sensitive or protected habitats such as riparian areas during routine operation or maintenance activities;			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Creation of a map of the pipeline route depicting the location of all special status plants, wildlife, important nesting areas, and wetlands, to be used during necessary vehicular travel, for pedestrian use, or during equipment placement, to avoid these resources; • Prohibition of disturbance to and clearing of coastal, riparian, and wetland vegetation during inspections. Travel and work areas would be flagged and fenced before repair work to identify and avoid impacts on sensitive habitats as depicted on the pipeline map; and • Maintenance of records of mitigation implementation on file at the pipeline maintenance office. **AM TerrBio-2c. Employee Environmental Awareness Program (EEAP).** The Applicant or its designated representative would conduct an employee awareness program before groundbreaking to explain the applicable endangered species laws and any endangered species concerns to contractors working in the area. Through the EEAP, all of the Applicant's employees, designated representatives, and subcontractors would be informed of the sensitive biological resources potentially occurring in the Project area. The Applicant's EEAP would: • Discuss the locations and types of sensitive biological resources on the Project site and in adjacent areas; • Discuss the importance of removing trash from the work area and adhering to all other applicable BMPs; • Cite the laws, policies, or other reasons for protecting these resources; • Present the meaning of various temporary and permanent habitat protection measures; • Describe what to do if previously unidentified sensitive resources are encountered;			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Identify whom to contact if there are further comments and questions regarding the material discussed in the program; • Discuss traffic management strategies to avoid mortality of sensitive small mammals, reptiles, and other less mobile species, which are designated as rare, threatened, endangered, or a species of concern, pursuant to the first bullet. Such strategies may include (1) restriction of all Project-related vehicle and equipment traffic to established roads or access routes; (2) enforcement of a 20-mile (32 km) per hour speed limit within the work areas, except on county roads and highways; and (3) identification of vehicle and equipment access routes and work area before pipeline construction activities begins; and • Discuss the importance of maintaining site safety to avoid mortality of small mammals, reptiles, and other less mobile species, which are designated as rare, threatened, endangered, or a species of concern, pursuant to the first bullet. Issues to discuss may include (1) prohibition of pets or firearms on the Project site; (2) maintenance of designated protected areas; and (3) installation of exclusionary fencing in and flagging of adjacent habitats that potentially support listed species or sensitive habitat to delineate work area to prevent equipment from entering into adjacent habitat. Each participant in the on-site EEAP would sign a statement declaring that he or she understands and will abide by the guidelines set forth in the program materials. In addition, the Applicant would be responsible for ensuring that all Project personnel and subcontractors adhere to the guidelines and restrictions. Additional training would be conducted as needed—including morning “tailgate”			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	sessions—to update crews as they advance into sensitive areas and to educate new personnel brought on the job during the construction period. Project personnel would receive a hardhat sticker or be issued a card verifying compliance with these measures. In addition, a record of all personnel trained during the Project would be maintained and made available for compliance verification. **AM TerrBio-2d. Biological Monitoring.** The Applicant or its designated representative would use a qualified biological monitor to conduct the EEAP program and on-site biological monitoring. According to the Applicant, the minimum qualifications of the biological monitor would be: • A bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field; • Three years of experience in field biology; • One year of field experience with resources found in or near the Project area; and • Ability to demonstrate the appropriate education and experience for the biological resource tasks that must be addressed during Project construction and operation. The biological monitor would supervise and verify the implementation of the EEAP, the Erosion Control Plan, and the BRMIMP. The biological monitor would be present for all water crossings and for work in areas where sensitive plants have been identified and would be responsible for pre-construction surveys, administering the EEAP for construction crews, staking sensitive resources, on-site monitoring, documentation of violations and compliance, coordination with contract compliance inspectors, and post-construction documentation. The biological monitor would be qualified to recognize potential construction effects on these resources. The biological monitor would ensure that State and/or Federal wetland protection guidelines are followed and that an adequate setback of at least 15 feet			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	(4.6 m) (or other distance mandated by the CDFG or the USFWS) is observed at wetland and/or riparian (woody vegetation) edges. **AM TerrBio-2e. Confine Activity to Identified ROW.** The Applicant or its designated representative would limit all proposed roadway construction to the existing roadway surface wherever special status plants or their habitats occur adjacent to the roadway. In addition, the Applicant would confine construction equipment to the roadway surface and would restrict associated activities to the 80-foot (24.4 m) ROW in all areas that support sensitive resources near work areas, as identified on Project maps. In sensitive areas that would be avoided by directional drilling, drill rigs and equipment staging would remain outside sensitive habitats, with an adequate buffer, consistent with established resource agency guidelines to avoid potential adverse effects on the resource. Work area boundaries would be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying and to minimize the potential for inadvertent worker intrusion into sensitive areas. Special habitat features identified by the biological monitor would be avoided, and previously disturbed areas within the Project ROW would be used for stockpiling excavated materials, equipment storage, and vehicle parking. During EEAP training, construction personnel would be informed of the importance of remaining within the designated ROW. The Lead Resource Coordinator, with support from biological monitor(s), as necessary, would ensure that construction equipment and associated activities avoid any disturbance of sensitive resources outside the ROW. **MM TerrBio-2f. Riparian Avoidance and Restoration.** The Applicant or its designated representative shall avoid, minimize, and compensate for impacts on riparian habitat			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	during construction due to trenching or open cut crossings of waters of the United States by: • Avoiding potential impacts on riparian forest by clearly identifying and marking important areas, boring under waters of the United States where feasible, and identifying any proposed riparian habitat removal (and subsequent restoration) locations; • Consulting with the CDFG for any unavoidable impacts on riparian vegetation, and fencing riparian vegetation adjacent to work areas to prevent impacts; • Preparing and implementing riparian restoration, including replanting and monitoring elements. Implementation of these measures shall be supervised and verified by an approved biological monitor; • Before construction, identifying methods to restore the beds and banks of waters of the United States to pre-construction conditions, including appropriate replacement ratios. Such methods shall be in accordance with issued permit conditions or, at a minimum, a 3:1 replacement ratio of habitat acreage and a 12:1 replacement ratio of trees (as recommended by CDFG) and shrubs present before construction; and • Identifying restoration methods, including native tree and shrub species matching pre-construction conditions, understory native seed mix composition and application methods, planting methodology, description of monitoring efforts to measure replacement success, success criteria, and contingency measures for off-site habitat creation in the event mitigation measures are unsuccessful or success criteria are not satisfied. **MM TerrBio-2g. Tree Avoidance and Replacement.** The Applicant or its designated representative shall, to the extent possible, avoid, minimize, and compensate for impacts on trees by implementing the following:			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Pre-construction identification, fencing, and avoidance of trees to the maximum practicable extent during construction; • Replanting of tree rows impacted by construction activities on a 2:1 replacement ratio, as recommended by CDFG. Replacement trees would be 15-gallon trees approximately 8 to 10 feet in height. The type of tree planted would be determined in consultation with the CDFG and the landowner, and planting of native tree species such as native sycamore, oak or other large native tree species is recommended; • Consultations with local jurisdictions if unavoidable impacts on locally protected trees ("Protected Trees") are likely to occur. Pockets of coast live oaks potentially occur within the proposed Project ROW in Los Angeles County, and permits must be obtained if any of these trees would have to be removed for pipeline installation; • Replacement of oak trees as required under the City of Santa Clarita Oak Tree Ordinance; • Development and implementation of a Tree Replacement Plan for loss of and/or significant damage to trees; • Supervision and verification of the implementation of these measures by the biological monitor; and • Monitoring, nurturing and protection within the dripline of trees replaced for a minimum of five years.			
TerrBio-3: *Temporary or Permanent Changes to Wetlands or Waters of the United States during Construction* Construction (such as trenching) in wetlands or waters of the United States could remove vegetation, including special status species, disrupt the hydrology of the	**AM WAT-6b. Spill Response Plan** (see Section 4.18, "Water Quality and Sediments"). **MM TerrBio-3a. Avoid, Minimize, or Reduce Impacts on Wetlands.** Impacts on wetlands or waters of the United States shall be avoided, minimized, or reduced by at least the following mitigation measures: • Identifying and marking any wetland areas, including	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
wetlands within and adjacent to the construction area, or alter the habitat for special status plant species (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	those identified to support special status species, to be avoided during construction and operation activities; • Limiting the width of the construction ROW through identified wetlands or waters; • Limiting the operation of construction equipment within the wetlands or waters to the greatest extent possible; and • Using prefabricated mats in saturated or standing water wetlands. **MM TerrBio-2f. Riparian Avoidance and Restoration** would apply here.			
TerrBio-4 *Permanent Impact Caused by Noxious Weed Invasion* Construction-related disturbance could provide an opportunity and seedbed for the invasion of weeds, which could adversely affect special status plant species or habitats and upland vegetation (CEQA Class III; NEPA major or moderate adverse, short- or long-term).	**AM TerrBio-4a. Weed Management.** The Applicant or its designated representative would implement the following measures to prevent the spread of invasive weeds: • A noxious weed survey would be performed to identify known locations of noxious weeds or populations currently being managed by the county noxious weed boards. • Invasive exotic plants would be removed from the work area. • When equipment is mobilized from an area infested with exotic plant species, the tires and undercarriages of all vehicles and construction equipment would be sprayed or washed to prevent the spread of noxious weed species into an unaffected area. Other elements of the Applicant's Weed Management Program would include procedures to monitor and control the spread of weed populations along the pipeline. The biological monitor would implement the program by following procedures outlined in the Weed Management Program: • Clean all vehicles used in terrestrial construction before operating on and off maintained roads;	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Obtain all fill material, soil amendments, and gravel required for construction/restoration activities from a "weed-free" source; • Clear existing vegetation from areas only for the width needed for active construction activities; • Salvage and replace the upper 12 inches (0.3 m) of topsoil (or less, depending on the existing depth of the topsoil) wherever the pipeline is trenched through open land (not including graded roads and road shoulders); and • Revegetate disturbed soils with an appropriate seed mix that does not contain introduced or noxious weeds			
TerrBio-5: *Direct Permanent Impact on Wildlife Mortality* Construction activities associated with pipeline installation, staging areas, HDD or HDB locations, and access roads could cause the mortality of small mammals, reptiles, and other less-mobile species. Direct mortality could also be associated with increased human activity, particularly involving wildlife habitat removal and animal/vehicle collisions (CEQA Class II; NEPA moderate or major adverse, long-term).	**AM TerrBio-2c. Employee Environmental Awareness Program (EEAP)** would apply here. **AM TerrBio-2d. Biological Monitoring** would apply here. **MM TerrBio-5a. Pre-Construction Wildlife Surveys.** To minimize the potential for causing mortality of local wildlife, the Applicant or its designated representative shall engage a qualified wildlife biologist to conduct additional pre-construction surveys in advance of any vegetation clearing, or excavation or other activity that causes disturbance to surface soils. Surveys would be completed by a competent biologist, familiar with local birds, mammals, amphibians, and reptiles, with survey requirements including any relevant agency protocols, and survey seasons.	Onshore	USCG/CSLC	Pre-Construction, Construction
CULTURAL RESOURCES (Section 4.9)				
CULT-1: *Marine Archaeological Sites and Artifacts* The Project could violate cultural resource standards or cause an adverse change in archaeologically significant resources in offshore Project areas (CEQA Class III; NEPA major adverse, long-term).	**AM CULT-1a. Marine Archaeological Surveys.** Additional marine archaeological surveys would be performed to confirm the location of and gather further information on the submerged objects determined to be subject to potential impact from the Project. Shipwrecks or other underwater cultural resources identified as culturally significant would be avoided. Pipelaying barges would use	Offshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	dynamic positioning except near shore, where normal anchoring could occur (as identified in the Applicant's Anchor Mitigation Plan for HDB Nearshore Pipeline Project Marine Operations).			
CULT-2: *Native American Values* The Project could violate cultural resource standards by impacting resources that are of value to Native American culture and heritage, particularly the Ventura Chumash (CEQA Class III; NEPA major adverse, long-term).	**AM CULT-2a. Site Avoidance.** The Applicant would avoid identified sites and adhere to State of California burial remains legislation and the Native American Graves Protection and Repatriation Act as applicable. **AM CULT-2b. Native American Values.** The Applicant would incorporate the following measures to avoid impacts on Native American values: • Native American monitoring would be included in Project-related activities that result in disturbance of surface and subsurface components of archaeological sites; • Artifacts recovered from archaeological sites would be curated at a qualified museum or historical facility that allows access to Native Americans; • Procedures specified in the State CEQA Guidelines 15064.5(e) and Health and Safety Code § 7050.5 and Public Resources Code § 5097.98 would be implemented if human remains are discovered in the Project area; and • Significant oak trees and other plants and animals of local Native American concern would be avoided to the extent possible, and impacts on native plants would be minimized by allowing collection of herbs before construction and by relocating and replanting grasses. If such resources are unavoidable during Project construction or maintenance, further investigations in the form of complete documentation would be implemented. All such investigations would include Native American participation where mandated by Federal, State, and local law.	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	AM CULT-1a. Marine Archeological Surveys applies here. **AM CULT-3a. Archaeological Monitoring** applies here. **AM CULT-3b. Unanticipated Discovery Plan** applies here. **AM CULT-3c. Pre-Construction Pedestrian Survey** applies here (onshore only).			
CULT-3: *Terrestrial Historic or Archaeological Resources* The Project could violate cultural resource standards, cause an adverse change in the significance of a historic or archaeological resource, or disturb human remains in onshore Project areas (CEQA Class III; NEPA major adverse, long-term).	**AM CULT-3a. Archaeological Monitoring.** A qualified archaeologist would monitor all construction within 328 feet (100 m) of archaeological sites and areas with high potential for the occurrence of sites buried under alluvium, including the shoreline crossing. If sites are identified during the monitoring phase of construction, the archaeologist would be empowered to stop all construction activities in the vicinity of the find and evaluate the resource. Such evaluation would require a Phase 2 subsurface testing and evaluation program. If remains prove to be significant and site avoidance cannot be implemented through Project redesign, a Phase 3 data recovery program would be implemented to mitigate impacts. **AM CULT-3b. Unanticipated Discovery Plan.** To ensure compliance with mitigation measures, a cultural resources management plan has been developed pursuant to all relevant Federal, State, and local cultural resources guidelines and criteria, including NEPA § 101(b), and CEQA Guidelines §§ 15064.5(e) and (f). The plan includes an overview of the regulations that apply in the event of an unanticipated discovery and identifies specific steps to be undertaken for treatment or discovery of remains. The plan covers: • Authority to halt construction; • Procedures when skeletal remains are found; • Protection while awaiting recommendations from most	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	likely descendants; • Treatment as recommended by most likely descendants; • Reporting; and • Curation of archaeological material not associated with human remains. **AM CULT-3c. Pre-Construction Pedestrian Survey.** The Applicant would employ a qualified archaeologist to conduct a pre-construction pedestrian survey over any segments of the route that have not already been surveyed. If unanticipated surface evidence of an archaeological site is observed, the Applicant would follow the Unanticipated Discovery Plan.			
ENERGY (Section 4.10)				
ENE-1: *Access to Oil and Gas Resources* The Project may temporarily restrict access to or availability of oil and gas resources (CEQA Class III; NEPA minor adverse, short-term).	None.	Onshore	USCG/CSLC	N/A
ENE-2: *Create Significant Effects on Local or Regional Energy Supplies* The Project would have a beneficial impact on local and regional energy supplies (CEQA Class IV; NEPA beneficial).	N/A - beneficial impact.	Onshore (Regional)	USCG/CSLC	N/A
GEOLOGY (Section 4.11)				
GEO-1: *Worsens Existing Unfavorable Geologic Conditions and/or Releases Toxic or Other Damaging Material into the Environment* Construction activities could temporarily worsen existing unfavorable geologic	**AM GEO-1a. Drilling Location.** For HDB activities at the shore crossing, the Applicant or its designated representative would locate the onshore entry and offshore exit points of the drilling outside of the area affected by normal storms. In addition, the pipeline would be buried deep enough to prevent surfacing due to storm-induced erosion.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
conditions (CEQA Class II; NEPA moderate or major adverse, long-term).	**AM TerrBio-1a. Erosion Control** would apply to this impact (see Section 4.8, "Biological Resources – Terrestrial") **MM GEO-1b. Backfilling, Compaction, and Grading.** Following construction of the onshore pipelines, the Applicant or its designated representative shall properly backfill and compact the right-of-way as defined by standard construction practices, grade the trench to preexisting contours and revegetate/restore the landscape to preexisting conditions to prevent preferential flow paths, erosion, or subsidence. **MM WAT-3a. Drilling Fluid Release Monitoring Plan** would apply to this impact (see Section 4.18, "Water Quality and Sediments").			
GEO-2: *Cause a Loss of a Unique Paleontological Resource* Construction activities could disturb or destroy paleontological resources; such impacts are typically permanent (CEQA Class II; NEPA moderate or major adverse, long-term).	**MM GEO-2a. Inspection.** The Applicant or its designated representative shall have a qualified paleontologist complete a paleontological inspection prior to excavating in the suspect areas between Center Road Pipeline MP 12.6 and MP 14.3 in Beardsley Wash, and Line 225 Pipeline Loop from Loop MP 0.0 to MP 3.5 and MP 6.7 and MP 7.7. Paleontological monitoring of excavations in these areas shall be undertaken by a qualified paleontologist based on the findings of the inspection. The paleontologist shall provide education and training for construction workers about potential paleontological resources that may be discovered and, subject to prior approval by the CSLC, he/she shall have the ability to stop construction if potentially significant resources are identified and threatened by the Project. All specimens collected from public land shall be deposited at a curating institute such as the University of California.	Onshore	USCG/CSLC	Pre-Construction, Construction
GEO-3: *Expose People or Structures to Adverse Effects Due to Direct Rupture along Fault Lines, Ground Shaking, or*	**AM GEO-3a. Avoidance.** The Applicant would avoid crossing known active fault zones, where possible. **AM GEO-3b. Pipeline Flexibility.** Except for the shore	Onshore and Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Seismic-related Ground Failure Damage to pipelines or other facilities could occur due to direct rupture (ground offset) along fault lines (CEQA Class II; NEPA moderate or major adverse, short-term).	crossing, where the pipelines would be installed beneath Ormond Beach, the Applicant would install the offshore pipelines directly on the seabed surface to allow enhanced flexibility (compared with a buried pipeline) and to help them withstand movement caused by fault rupture. Under normal conditions (not due to mass movement) some sediment may cover the pipelines; however, minor sediment should not affect the flexibility of the pipelines. Pipeline routes would also be designed to cross potential faults at as much as a right angle as possible if determined by site-specific conditions to be the most appropriate design. Offset of pipelines crossing strike-slip or normal faults at right angles typically induces tension in the pipe, rather than compression. Pipelines can withstand significant offset when in tension. **MM GEO-3c. Geotechnical Studies.** The Applicant, as a condition of any lease, shall complete final site-specific geotechnical and seismic hazard studies, to be approved by the CSLC and USCG or MARAD, as appropriate, prior to final pipeline design and construction. The studies shall cover suspected active fault crossings to accurately define the fault plane location, orientation, and direction of anticipated offset, and shall include the magnitude of the anticipated offset at the fault locations; this information shall be used to refine fault crossing design parameters. The final site investigation report(s) shall contain, at a minimum, the following information: For Offshore Pipelines: • A wide-area swath bathymetry program to evaluate turbidity flow pathways from canyons that are outside the immediate Project area; • Additional near-bottom geophysical surveys (side-scan sonar and sub-bottom profiler data);			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Shallow geotechnical borings at each anchor location and pipeline end member location; • Shallow geotechnical borings at selected locations along the route of the proposed pipelines to evaluate soil conditions, including fault zones; • Shallow geotechnical borings within canyon sidewalls adjacent to the route of the proposed pipelines to assess soil conditions relative to slope stability; and • Shallow geotechnical borings along the HDD path to evaluate soil conditions in the offshore area. For Onshore Pipelines: • Shallow geotechnical borings at selected locations along the onshore pipeline route to evaluate soil conditions, including near any fault zones; and • Shallow geotechnical borings at selected locations associated with identified landslide hazard areas adjacent to the proposed pipeline route to assess soil conditions relative to slope stability. **MM GEO-3d. Design and Operational Procedures.** The Applicant shall evaluate a larger trench, engineered backfill, thicker wall pipe, and telemetric control for final pipeline design. The Applicant shall use design guidelines in the publications *Draft Guideline for Assessing the Performance of Oil and Natural Gas Pipeline Systems in Natural Hazard and Human Threat Events,* and *Guidelines for the Seismic Design and Assessment of Natural Gas and Liquid Hydrocarbon Pipelines.* **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls** would apply to this impact.			

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
GEO-4: *Cause Severe Damage to Project Components as a Direct Consequence of a Geologic Event, Releasing Toxic or Other Damaging Materials into the Environment.* Ground shaking from earthquakes, which is of a transitory and sporadic nature, could damage Project components (CEQA Class II; NEPA moderate or major adverse, short-term).	**MM GEO-4a. Design for Ground Shaking.** The Applicant shall employ proper seismic design, including but not limited to the design guidelines in the publications *Guidelines for the Design of Buried Steel Pipe*, *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems*, and the American Society of Mechanical Engineers' *Managing System Integrity of Gas Pipelines*.	Onshore and Offshore	USCG/CSLC	Pre-Construction, Construction
GEO-5: *Damage a Pipeline due to Landslides, Mudflow, Lateral Spreading, Subsidence, Liquefaction, or Collapse as a Result of Locating the Project on a Geologic Unit or Soil that is Unstable* Mass movement, which is of a transitory and sporadic nature, could damage pipelines or structures (CEQA Class III; NEPA moderate or major adverse, short- or long-term).	**AM GEO-5a. Avoid Areas of Mass Movement.** To the extent possible, the Applicant would avoid areas of soil susceptible to mass movement and areas of steeper slopes (for example, where the proposed Line 225 Pipeline Route crosses at the Santa Clara River and San Francisquito Creek, where mass movement may be more likely). The pipeline would be attached to existing bridges to avoid mass movement along the stream banks and would be designed with a thicker wall pipe to withstand potential pressures due to mass movement and to allow flexibility should movement occur. **MM GEO-3c. Geotechnical Studies** would apply to this impact. **MM GEO-3d. Design and Operational Procedures** would apply to this impact**.**	Offshore	USCG/CSLC	Pre-Construction
GEO-6: *Damage to Pipelines from Tsunamis* Tsunamis, which are transitory and sporadic in nature, could damage nearshore pipelines or facilities due to the typical force and erosive nature of these storms (CEQA Class III; NEPA moderate or major adverse, short-term).	**AM GEO-6a. Pipeline Burial.** The pipeline at the shore crossing would be buried at least 50 feet (15.2 m) below the surface of the beach and deeply enough below sea level to minimize the potential of frac-outs. This will also avoid potential damage from tsunamis.	Offshore, Nearshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
HAZARDOUS MATERIALS (Section 4.12)				
HAZ-1: *Release of Oil or Hazardous Materials and Contamination of Marine Environment due to Offshore Operations* Improper handling of hazardous materials or leaks in containers on the FSRU could result in a release to the marine environment or exposure of workers or the public (CEQA Class III; NEPA major or moderate adverse, short- or long-term).	None.	Offshore	USCG/CSLC	N/A
HAZ-2: *Release of Oil or Hazardous Materials Spills Could Result in Soil Contamination due to Pipeline Construction Activities* Activities associated with site preparation, construction, and drilling, as well as operations and maintenance activities, could result in an accidental spill of hazardous materials or oil and exposure of workers or the public (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	**MM HAZ-2a. Maintain Equipment.** The Applicant, or its designated representative, shall maintain equipment in operating condition to reduce the likelihood of fuel or oil line breaks and leakage. Any vehicles with chronic or continuous leaks shall be removed from the construction site and repaired before being returned to operation. **MM HAZ-2b. Hazardous Material Contingency Plan.** The Applicant, or its designated representative, shall prepare a detailed hazardous material contingency plan per RCRA and the Hazards Waste Control Act that describes how the contaminated soil and/or groundwater is to be handled and disposed pursuant to law, as well as training for personnel. This plan must receive prior approval from the USEPA or the DTSC before construction begins. **MM WAT-3a. Drilling Fluid Release Monitoring Plan** applies here (see Section 4.18, "Water Quality and Sediments").	Onshore	USCG/CSLC	Pre-Construction, Construction
HAZ-3: *Release of Existing Contaminants from Sediments, Soils, or Groundwater* Construction activities could unearth existing contaminated sites onshore and offshore, causing potential health hazards to construction workers, the public, and marine and terrestrial ecology (CEQA	**MM HAZ-3a. Consult with DTSC Regarding Cleanup of Soil and Groundwater at Whittaker-Bermite Site (MP 0.2 to 1.25).** Soil contamination in OU 2 immediately adjacent to or within the proposed pipeline route is expected to be cleaned up by 2006 and certified as such by DTSC. The Applicant or its designated representative shall coordinate with DTSC to identify potential soil and/or groundwater	Onshore, Offshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
Class II; NEPA major or moderate adverse, short- or long-term).	contamination hazards present in the proposed pipeline ROW and to determine whether additional surveys or screening-level sampling are warranted in areas to be disturbed by pipeline construction prior to any construction. To confirm that the appropriate level of coordination occurs with the DTSC, the Applicant, or its designated representative, shall submit a letter detailing the results of consultation with the DTSC and any specific measures that are to be implemented during construction to the CSLC, with a copy to the DTSC, 60 days prior to initiating construction. The CSLC would assist the Applicant or its designated representative with DTSC consultation, if requested by the Applicant or its designated representative. **MM HAZ-3b. Onshore Surveys.** In areas where the proposed pipeline alignments diverge from existing ROWs, the Applicant or its designated representative shall conduct additional surveys to identify potential areas of soil and/or groundwater contamination. If contaminated sites are identified, the Applicant or its designated representative shall implement its Hazardous Material Contingency Plan (see MM HAZ-2b) and implement best management practices.			
HAZ-4: *Potential Disturbance or Detonation of Unexploded Ordnance due to Onshore or Offshore Construction* Offshore pipeline installation and onshore pipeline construction activities could encounter UXO, causing an explosion that could result in serious injuries or fatalities to workers or the public, and—for offshore locations—serious injuries or fatalities to marine life from subsurface blast pressures (CEQA Class II; NEPA major or moderate adverse, short- or long-term).	**MM HAZ-4a. Offshore Surveys.** The Applicant shall conduct additional surveys at the offshore pipeline installation within and near the Point Mugu Sea Range to locate visible and shallowly buried UXO that might be disturbed by pipeline installation and avoid identified UXO or develop, in consultation with the U.S. Navy, procedures to eliminate such UXO. **MM HAZ-4b. Coordination with the California Department of Toxic Substances Control.** The Applicant, or its designated representative, shall coordinate with the DTSC and notify the City of Santa Clarita before conducting any surveys or construction activities at parts of the Line 225 Pipeline Loop route on or near the Whittaker-	Onshore and Offshore	USCG/CSLC	Pre-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	Bermite site to determine whether additional UXO surveys would be warranted and shall ensure that those surveys are conducted if deemed necessary. If UXO is present, the Applicant will recover and dispose it as required by DTSC prior to beginning construction. The Applicant, or its designated representative, shall submit a letter to the CSLC and the USCG with a copy to the DTSC documenting the outcome of coordination and the status of follow-up 60 days prior to beginning construction.			
LAND USE (Section 4.13)				
	AM LU-1. Construction of Center Road Pipeline in Future ROW Along McWane Boulevard if McWane Boulevard is Approved and Constructed Prior to the Construction of the Center Road Pipeline. The Draft Ormond Beach Specific Plan in the City of Oxnard identifies McWane Boulevard as a future east-west public street that may be located south of Hueneme Road. In the event that McWane Boulevard is approved and constructed prior to the construction of the Center Road Pipeline, the Applicant shall locate the Center Road Pipeline within the ROW for McWane Boulevard. The pipeline shall run north from the metering station at Ormond Beach, turn east along McWane Boulevard to Arnold Road, turn north along Arnold Road to Hueneme Road, and turn east along Hueneme Road to resume the proposed alignment of the Center Road Pipeline.	**Onshore**		Pre-Construction, Construction
LU-1: *Changes in Existing Land Use* Implementation of the Project would change an existing land use (CEQA Class III; NEPA moderate or major adverse, long-term)	**AM AGR-1a. Compensation for Temporary and Permanent Loss of Agricultural Land, Crop Loss, Future Loss of Production, and Other Negative Impacts** would apply here (see Section 4.5, "Agriculture and Soils").	Onshore	USCG/CSLC	Pre-Construction, Post-Construction,

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
LU-2: *Disruption to Adjacent Properties* Construction may cause temporary disturbances or nuisances to nearby residents and businesses or to special land uses (CEQA Class II; NEPA minor adverse, short-term).	**AM LU-2a. Minimize Disruption for Residences, Businesses, and Special Land Uses in or near the Construction Area.** The Applicant or its designated representative would minimize disruption in residential and business areas during construction by: • Restricting construction activities to 7 a.m. to 7 p.m. or per time restrictions specified in local road encroachment permits. • Installing temporary safety fencing to exclude pedestrians/ residents from the construction area. • Avoiding the removal of trees outside of the construction easement. • Working with the City of Santa Clarita to refine the segment of pipeline route in the Quigley Canyon area (MP 0.0 to 1.75) to minimize impacts on permitted/planned residential properties. • Placing metal plates over open trenches at the edge of the construction work area adjacent to residences and businesses and at intersections to allow access to adjacent land uses. • Minimizing the length of time that the trench is left open. • Planning construction staging activities around special cultural events, such as the Oxnard Strawberry Festival. **AM LU-2b. Reduce Disruption for Residences Within 25 Feet (7.6 m) of the Construction Work Area.** The Applicant or its designated representative would further reduce disruption in residential areas during construction by: • Leaving mature trees and landscaping within the edge of the construction work area unless necessary for safe operations of construction equipment. • Installing a safety fence at the edge of the construction work area adjacent to the residence for a distance of	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	100 feet (30.5 m) on either side of the residence to ensure that construction equipment and materials, including spoil piles, remain within the construction work area. • Limiting the construction ROW to 50 feet (50.2 m) when constructing in (non-franchise [i.e., non-public road]) residential areas, where feasible. • Maintaining a minimum of 25 feet (7.6 m) between the residence and the construction work area, wherever possible. **AM AIR-2a. Fugitive Dust Controls** would be implemented (see Section 4.6, "Air Quality"). **MM LU-2c. Coordinate with Other Utilities.** Before construction, coordinate with other utility service providers to ensure conflicts with other maintenance or construction activities are minimized during construction. **MM NOI-6a. Post Signs** would apply here (see Section 4.14, "Noise and Vibration"). **MM NOI-6b. Equipment Location** would apply here (see Section 4.14, "Noise and Vibration"). **MM TRANS-1a. Traffic Control Plans** would apply here (see Section 4.17, "Transportation").			
NOISE (Section 4.14)				
Offshore				
NOI-1: *Noise Generated During the Installation of the FSRU and Offshore Pipelines* Noise generated by vessels or equipment during installation of the mooring system, FSRU, and offshore pipelines could result in temporary increases in noise levels in the area, which could impact sensitive noise receptors such as recreational	**AM MT-1a. Safety Vessel Warnings** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM NOI-1a. Efficient Equipment Usage.** The Applicant shall: • Operate construction equipment only on an as-needed basis during this period, and maintain it to the manufacturer's specifications. This will serve to reduce the number of noise producing events.	Offshore	USCG/CSLC	Pre- and Post-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
boaters or fishers (CEQA Class II; NEPA minor adverse, short-term).	• Ensure that equipment engine covers are in place and mufflers are in good working condition for the installation of the mooring system, FSRU, and offshore pipeline. • Require that prospective contractors for the offshore pipeline installation address noise reduction measures in their respective bid proposals, such as (1) the extent to which they will use engines with lower noise ratings, (2) phased construction activities to reduce simultaneous operations of engines, and (3) all other practices they would follow to reduce equipment noise emissions. **MM MT-1c. Notices to Mariners** would apply to this impact (see Section 4.3, "Marine Traffic").			
NOI-2: *Long-Term Noise Generated During FSRU Operations* Recreational boaters and fishers at certain distances from the FSRU could hear noise generated by FSRU operations over the long-term (CEQA Class I; NEPA moderate adverse, long-term).	**MM BioMar-5a. Noise Reduction Design.** The Applicant shall work with marine architects, acoustic experts and mechanical engineers and the USCG, among others, to design the FSRU and its equipment to reduce, to the maximum extent feasible, the output of cumulative noise from the facility.	Offshore	USCG/CSLC	N/A
NOI-3: *Temporary Noise Generated by Support Vessels During Offshore Operations* LNG carriers, crew boats and supply vessels, or helicopters could temporarily increase noise levels for sensitive receptors, such as recreational boaters and fishers during operations (CEQA Class I; NEPA moderate adverse, long-term).	**AM NOI-3a. Daytime Operations.** The Applicant would operate crew boats, supply vessels, and helicopters during daytime hours, except during emergencies. The operation of these vessels would be less disturbing during daytime hours when there is greater ambient background noise and people are not typically involved in activities that require lower noise levels.	Offshore	USCG/CSLC	Pre-Construction, Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
NOI-4: *Temporary Noise Generated During Construction using Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), or Other Drilling Techniques* HDB at the shore crossing and HDD or other drilling techniques at onshore waterways and intersection crossings could temporarily increase noise levels for sensitive receptors. Noise levels could exceed local noise ordinances or permit conditions (CEQA Class I; NEPA moderate adverse, short-term).	**AM NOI-4a. Construction Noise Reduction Measures** • **Monitoring.** The work area would be monitored for noise and vibration levels prior to beginning construction work to establish the background and during construction to determine compliance with noise ordinances and vibration criteria. • **Enclose power unit.** The drilling rig power unit would be enclosed. • **Noise Barriers.** The drilling rig would be partially enclosed or noise barriers would be placed around it. • **Enclose mud pumps and engines.** The mud pumps and associated engines would be partially or totally enclosed. • **Enclose generator sets.** Generator sets would be totally enclosed or acoustically packaged generator sets would be used. • **Partially enclose mud mixing.** Mud mixing and cleaning equipment would be partially enclosed or noise barriers would be placed around this equipment. • **Provide engine compartment treatments.** Engine compartment treatments would be provided for mobile cranes and boom trucks. • **Modify backup alarms.** Lay out construction sites to minimize the need for backup alarms; use strobe lights in place of backup alarms at night; use flagmen to keep the area behind maneuvering vehicles clear; and use self-adjusting backup alarms that adjust the alarm loudness depending on ambient noise. • **Orient loading bins.** Loading bins would be oriented to minimize noise impacts on adjacent areas. • **Restrict use of mobile equipment.** Use of mobile equipment would be restricted during nighttime hours.	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• **Enclose light set engines.** Engines for the light sets would be totally enclosed. • **Temporary hay bales as noise barriers.** Hay bales would be placed on site as a temporary noise barrier. • **Place silencers on engines.** Silencers on engines would be placed on all equipment where possible. **MM NOI-4b. Use Noise Blankets.** During Project construction, noise blankets shall be used to fully enclose equipment associated with boring where residences occur within 2,000 feet (610 m) and work occurs after 6 p.m. **MM NOI-4c. Limit Heavy Equipment Activity near Residences.** Heavy equipment activity adjacent to residences shall be limited to the shortest possible period required to complete pipeline installation. **MM NOI-4d. Cover the Equipment Engine.** The equipment engine shall be covered and the Applicant shall ensure that mufflers are in good working condition. **MM NOI-4e. Establish Telephone Hotline.** A phone number shall be established and publicized for members of the public to call should they have a noise complaint. Upon receiving a complaint, noise monitors will measure the levels and ensure that all appropriate noise controls are being implemented. **MM NOI-4f. Establish Procedures.** The Applicant or its designated representative shall establish procedures to stop or curtail drilling/boring or add additional measures to respond to any noise complaints or exceedances of any ordinances. However, it may not be possible to cease drilling since HDB cannot be stopped once it has begun.			
NOI-5: *Temporary Vibration Generated During Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), and Pipeline Construction Activities*	**AM NOI-4a. Construction Noise Reduction Measures.** **MM NOI-5a. Restricted Work Hours.** The Applicant or its designated representative shall ensure that work hours are restricted for pipeline construction activities, with the exception of HDB, involving motorized equipment from 7	Offshore and Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
HDB, HDD, boring, trenching, and other construction activities could temporarily create vibration levels at sensitive receptors (CEQA Class I; NEPA moderate adverse, short-term).	a.m. to 7 p.m. Monday through Saturday. **MM NOI 4c. Limit Heavy Equipment Activity Near Residences.**			
NOI-6: *Noise Generated During Construction of the Onshore Pipeline* Site preparation, pipeline installation, and construction of aboveground facilities could temporarily increase noise levels for sensitive receptors, such as schools and residences. Noise levels may exceed county and/or city noise ordinances or permit conditions during the installation of the onshore pipeline and associated structures (CEQA Class I; NEPA moderate adverse, short-term).	**AM NOI-4a. Construction Noise Reduction Measures.** **MM NOI-6a. Post Signs.** The Applicant or its designated representative shall post signs along the construction right-of-way (ROW) with approximate schedule and contact information. **MM NOI-6b. Equipment Location.** The Applicant or its designated representative shall locate stationary equipment, such as compressors and welding machines, away from noise receptors to the extent practicable. **MM NOI-4c. Limit Heavy Equipment Activity Near Residences** would apply here. **MM NOI-4d. Cover the Equipment Engine** would apply here. **MM NOI-4e. Establish Telephone Hotline** would apply here. **MM NOI-4f. Establish Procedures** would apply here. **MM NOI-5a. Restricted Work Hours** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction
NOI-7: *Noise Generated by Traveling to the Construction Site* Additional vehicular traffic carrying workers, equipment, and materials to the construction sites could temporarily increase noise levels for residences, schools, places of worship, or hospitals (CEQA Class III; NEPA moderate or major adverse, short-term).	None.	Onshore	USCG/CSLC	N/A

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
NOI-8: *Noise Generated During Onshore Pipeline and Associated Facilities Operations* Repair or maintenance operations of the onshore pipelines and associated aboveground facilities may temporarily exceed county and/or city noise ordinances or permit conditions (CEQA Class II; NEPA minor adverse, long-term).	**AM NOI-4a. Construction Noise Reduction Measures** would apply here. **MM NOI-4c Limit Heavy Equipment Activity Near Residences** would apply here. **MM NOI-4d. Cover the Equipment Engine** would apply here. **MM NOI-5a. Restricted Work Hours** would apply here. **MM NOI-4f Establish Procedures** would apply here. **MM NOI-6a. Post Signs** would apply here. **MM NOI-6b. Equipment Location** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction
RECREATION (Section 4.15)				
REC-1: *Temporary Restrictions on Offshore Recreational Boating and Fishing during Construction and Temporary Reductions of Fish Catch* Construction activities would temporarily restrict recreational boating and recreational marine fishing (CEQA Class III; NEPA minor adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
REC-2: *Restricted Recreational Fishing Due to Area to be Avoided* Operational activities could restrict offshore recreational activities because of the creation of a safety zone around the FSRU (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore	USCG/CSLC	N/A
REC-3: *Reduce the Quality of the Offshore Recreational Experience* During Project operations, the presence of the FSRU would alter the recreational experience of recreational boaters, including tourists and visitors on whale-	None.	Offshore	USCG/CSLC	N/A

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
watching trips and other visitors to the CINP (CEQA Class I; NEPA moderate adverse, long-term).				
REC-4: *Reduce the Recreational Experiences at or Restrict Access to Ormond Beach* Construction or maintenance activities at the shore crossing could temporarily impede recreational uses or degrade recreational experiences at Ormond Beach because of the noise, dust, and light generated during construction and repairs or because of an accidental release of drilling fluids or a gas leak (CEQA Class III; NEPA minor adverse, long-term).	None.	Onshore	USCG/CSLC	N/A
REC-5: *Reduce or Restrict Access to Parks or Reduce User Enjoyment* Construction activities could temporarily restrict access to parks due to increased traffic congestion or other nuisances in the general area of parks in the vicinity of pipeline construction (CEQA Class II; NEPA minor adverse, long-term).	**AM REC-5a. Contractor Yard Locations.** Contractor yards would be located at least 1 mile (1.6 km) away from park and recreational areas. **MM TRANS-1a**. **Traffic Control Plans** would apply to this impact (see Section 4.17, "Transportation").	Onshore	USCG/CSLC	Construction
REC-6: *Reduce or Restrict Access to Trails* Construction activities for the Line 225 Pipeline Loop would temporarily close the multi-use trails along the South Fork Santa Clara River (CEQA Class II; NEPA minor adverse, short-term).	**MM REC-6a. Trail Closure Signage and Information.** The Applicant or its designated representative shall post signs and disseminate information to the public about the multi-use trail along the South Fork Santa Clara River stating how long the trail will be closed, when it will be restored, and alternate routes. **MM REC-6b. Trail Restoration.** The Applicant or its designated representative shall restore the multi-use trail along the South Fork Santa Clara River to its previous	Onshore	USCG/CSLC	Pre- and Post-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	condition before construction within 21 days after completion of the section of the pipeline along the trail.			
SOCIOECONOMICS (Section 4.16)				
SOCIO-1: *Decrease in Catch Revenues for Commercial Fisheries due to Exclusion from Fishing Areas* The long-term and temporary exclusion of commercial fishers from fishing grounds could decrease catch revenues for commercial fisheries (CEQA Class II; NEPA moderate adverse, long-term).	**AM SOCIO-1a**. **Compensation for Lost Gear.** As a member of the Oil Caucus of the Joint Oil/Fisheries Committee of South Central California, the Applicant would negotiate mitigation for impacts on fishers using guidance from existing Joint Oil/Fisheries Committee guidelines for lost or damaged gear. **AM MT-1a. Safety Vessel Warnings** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-1b. Automatic Identification System** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-2b. Established Routes to and from Port Hueneme** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-2c. Compliance with JOFLO Vessel Traffic Corridors** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM SOCIO-1b. Arbitration.** If there is a complaint by a fisher related to impacts from the Project, the Applicant shall comply with a mutually agreed-upon settlement between itself and the injured party. If a settlement cannot be reached through voluntary negotiation that is acceptable to both parties, dispute resolution shall be conducted by a mutually agreed-upon arbitrator. The arbitrator shall be compensated by the Applicant. An arbitrator shall become involved if the voluntary negotiation is not concluded within three months.	Offshore	USCG/CSLC	Pre- and Post-Construction, Operations

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
SOCIO-2: *Decreased Commercial Fisheries Revenues due to Loss of Fishing Gear* The loss of commercial fishing gear from pipelines and supply boat traffic could decrease commercial fisheries revenues (CEQA Class II; NEPA minor adverse, short-term).	**AM SOCIO-1a. Compensation for Lost Gear** would apply to this impact. **AM MT-2b. Established Routes to and from Port Hueneme** would apply to this impact (see Section 4.3, "Marine Traffic"). **AM MT-2c. Compliance with JOFLO Vessel Traffic Corridors** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM SOCIO-1b. Arbitration** would apply to this impact. **MM MT-1c. Notices to Mariners** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM MT-1d. Securite Broadcasts** would apply to this impact (see Section 4.3, "Marine Traffic"). **MM MT-1e. Safety Vessel** would apply to this impact (see Section 4.3, "Marine Traffic").	Offshore	USCG/CSLC	Pre- and Post-Construction, Operations
SOCIO-3: *Increase in Regional Fishing Pressure* The permanent exclusion of commercial fishing from fishing grounds could increase fishing pressure in other areas or reduce the catch, resulting in negative economic impacts (CEQA Class III; NEPA minor adverse, long-term).	None.	Offshore	USCG/CSLC	N/A
SOCIO-4: *Small Increased Demand for Public Services* The Project would cause a slight increased demand for public services during construction and operations (CEQA Class III; NEPA minor adverse, long-term).	None.	Onshore	USCG/CSLC	N/A

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
TRANSPORTATION (Section 4.17)				
TRANS-1: *Temporary Increase in Traffic* During construction, the addition of the construction-related workforce and material deliveries to and from staging areas could temporarily increase traffic during peak construction periods (CEQA Class II; NEPA moderate adverse, short-term).	**MM TRANS-1a. Traffic Control Plans.** Two traffic control plans shall be prepared by a registered professional engineer in accordance with the Work Area Protection and Traffic Control Manual (1999): one for the Center Road Pipeline route and one for Line 225 Pipeline Loop route. Because CalTrans has its own requirements, where work occurs within a CalTrans ROW, the traffic control plan shall be developed and implemented in accordance with the CalTrans Traffic Manual. The plans shall detail the location, schedule, signage, and safety procedures for lane and road closures based on final pipeline engineering design. The plans shall be submitted to and approved by CalTrans and applicable local agencies at least 60 days prior to construction and shall include the following requirements: • Maintain two-way traffic at all times, and use flaggers as necessary; • Keep signage up to date and in good condition at all times; • Provide safety measures to separate motorists from construction workers; • Ensure access for emergency vehicles at all times; • Ensure access to private residences at all times; • Open lanes as soon as possible to restore normal traffic patterns; • Provide temporary access to businesses along the pipeline route during construction; • Cross highways and railroads by conventional HDD to minimize disruption to traffic; • Notify the public during construction, using methods such as large electronic monitoring signs, notification to impacted residents, appropriate detour signs, and	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	notifications to schools and emergency providers; • Provide an information hotline to be manned during business hours; • Provide a designated traffic control coordinator to ensure compliance with the Traffic Control Plan; • Reopen bicycle lanes as soon as possible to minimize disruption to bicycle traffic; and • After construction, restore the roads to their pre-construction condition. For areas outside of the CalTrans ROW, the Applicant or its designated representative would obtain encroachment permits from the appropriate jurisdiction. **MM TRANS-1b. Notification, Schedule Shifts, Carpooling**. During construction, the Applicant or its designated representative shall implement best management practices approved by CalTrans and/or the affected local government, such as notification, schedule shifts, and carpooling to minimize increases in traffic. The Applicant shall incorporate the following measures to minimize the impact of the short-term increase in traffic from the construction workforce and truck deliveries: • Coordinate with local jurisdictions to notify residents and transit operators of alternate traffic routes; • Schedule shifts and material deliveries to avoid peak traffic congestion hours; and • Provide incentives to promote carpooling among the construction workforce.			
TRANS-2: *Temporary Traffic Lane Closures* The Project could restrict one or more lanes of major roads, disrupting local traffic flow during peak hours (CEQA Class II; NEPA moderate adverse, short-term).	**MM TRANS-1a. Traffic Control Plans** would apply here**.**	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
TRANS-3: *Temporarily Reduced On-Street Parking Access* Construction could temporarily restrict residential on-street parking access (CEQA Class III; NEPA minor adverse, short-term).	None.	Onshore	USCG/CSLC	N/A
TRANS-4. *Temporary Closure of Bike Routes* Construction could result in temporary closure and/or restricted access to bike paths crossed by the onshore pipelines, which could adversely affect the safety of bicyclists (CEQA Class II; NEPA moderate adverse, short-term).	**MM TRANS-4a. Bike Detour Lanes.** Where bike paths are closed, the Applicant or its designated representative shall provide an alternative bike route, provide signs and notice of the pending closure at least 30 days prior to commencement of work at the affected location, and ensure that the route remains posted until the access is restored to its pre-construction condition. **MM TRANS-4b. Repair Damage to Bike Paths.** The Applicant or its designated representative shall restore any bike paths damaged as a result of Project construction to their pre-construction condition within 21 days of completion of the bike route-based portion of each alignment. **MM TRANS-1a. Traffic Control Plans** would apply here.	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction
TRANS-5: *Damage to Roads During Construction* Roads crossed or paralleled by the onshore pipelines, as well as those used to access the Project, could be temporarily damaged by increased traffic and heavy equipment (CEQA Class II; NEPA minor or moderate adverse, short-term).	**MM TRANS-5a. Repair Damage to Roads.** The Applicant or its designated representative shall repair to pre-construction conditions any damage to roads that occurs as a result of the Project within 21 days of completion of the road-based portion of each alignment or in accordance with local road encroachment permit conditions determined prior to construction, whichever is less. In addition, where a roadway has been rehabilitated within the past five years, the Applicant or its designated representative shall provide a full width overlay after trenching is completed. The Applicant or its designated representative shall negotiate with the appropriate jurisdiction regarding videotaping of existing roadways prior to construction and mitigation fees to be deposited into a trust fund.	Onshore	USCG/CSLC	Post-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
WATER QUALITY AND SEDIMENTS (Section 4.18)				
WAT-1: *Temporary Degradation of Offshore Water Quality due to Accidental Discharges* Accidental discharges of petroleum, sewage, or other contaminants from vessels during offshore construction and installation activities could temporarily degrade offshore water quality (CEQA Class III; NEPA minor or moderate adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
WAT-2: *Short-Term Increase in Turbidity or Accidental Unearthing of Contaminants during Offshore Construction* The installation of the FSRU and subsea pipelines could disturb seafloor sediments or release drill cuttings or fluids, causing a short-term increase in turbidity or accidental unearthing of contaminants (CEQA Class III; NEPA minor or moderate adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
WAT-3: *Short-Term Degradation of Surface Water or Groundwater Quality due to Accidental Release of Drilling Fluids* Accidental releases of drilling fluids at the shore during construction could degrade surface water or groundwater quality for the short term (CEQA Class II; NEPA minor or moderate adverse, short-term).	**MM WAT-3a. Drilling Fluid Release Monitoring Plan.** The Applicant shall implement its Drilling Fluid Release Monitoring Plan to minimize the potential for releases of drilling fluids, to properly clean up drilling fluids in the event of a release, and notify appropriate agencies should a release occur. The plan (see Appendix D1) would incorporate best management practices to reduce the impacts from releases of drilling fluids, including the following: • Maintaining containment equipment for drilling fluids on site; • Adding a non-toxic color dye to the drilling fluids to easily and quickly detect release of drilling fluids;	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Ensuring that a qualified environmental monitor or suitably trained water quality specialist is on site full time near sensitive habitat areas during HDB activities; • Stopping work immediately if there is any detection of bentonite seeps into surface water or sensitive habitats, for example, by a loss in pressure or visual observation of changes in turbidity or surface sheen; • Reporting all bentonite seeps into waters of the State or sensitive habitat immediately to the Project's resource coordinator, the CSLC, the Los Angeles RWQCB, and the appropriate resource agencies: National Oceanic and Atmospheric Administration Fisheries, U.S. Fish and Wildlife Service, the U.S Army Corps of Engineers, the California Department of Water Resources, the California Reclamation Board, the applicable city (Oxnard or Santa Clarita) and county (Ventura or Los Angeles); and • Cleaning up and properly disposing of any release of drilling fluids to the satisfaction of regulatory agencies.			
WAT-4*: *Short-Term Increase in Erosion due to Construction Activities Boring and trenching at stream crossings, including release of hydrostatic test water, could cause short-term increases in erosion (CEQA Class II; NEPA minor adverse, short-term).	**AM TerrBio-1a. Erosion Control** would apply to this impact (see Section 4.8, "Biological Resources – Terrestrial"). **MM WAT-4a. Strategic Location for Drilling Fluids and Cuttings Pit.** The Applicant or its designated representative shall ensure a pit has been excavated at the exit hole to collect and contain the drilling fluids and cuttings. Engineering controls shall be installed to ensure that fluids remain contained in the pit, including: • Locating the entry pit and exit pit sufficiently far from a stream bank and at a sufficient elevation to avoid inundation by the stream and to minimize excessive migration of groundwater into the entry pit or exit pit; • Isolating the entry pit and exit pit with silt fencing to avoid sediment transport into the surface water body;	Onshore	USCG/CSLC	Pre-Construction, Construction, Post-Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
	• Isolating the spoils storage from the excavation of the entry pit using silt fencing to avoid sediment transport; • Undertaking and completing proper disposal of excess spoils; backfilling and restoring the original contour of the entry pit and exit pit; and revegetating the area upon completion of the bore; • Monitoring the drilling fluid, if a release of drilling fluids occurs, by a qualified environmental monitor or suitably trained water quality specialist to determine the appropriate cleanup response; and • Consulting with regulatory agencies to determine the next appropriate step to clean up the area. **MM WAT-4b. Transport Excess Trench Spoils Offsite.** Excess trench spoils that are not used to backfill trenches shall be transported and disposed of offsite at an approved facility. **MM WAT-4c. Monitor Stream Crossing Construction.** A qualified environmental monitor or suitably trained water quality specialist shall be present at each stream crossing construction site to ensure compliance with applicable permits and mitigation. **MM GEO-1b**. **Backfilling, Compacting and Grading** would apply here (see Section 4.11, "Geologic Resources and Hazards").			
WAT-5a*: Degradation of Water Quality due to Accidental Release of Untreated Gray Water, Deck Drainage, and other Discharges that do not Meet Water Quality Standards* The FSRU or other Project vessels could accidentally release small amounts of contaminants, including bilge water, detergents, or human waste, to marine waters in excess of water quality	None.	Offshore	USCG/CSLC	N/A

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
standards (CEQA Class III; NEPA moderate adverse, short-term).				
WAT-5b: *Degradation of Water Quality due to an Accidental Release of Diesel Fuel from the FSRU, Pipelaying Vessel, or Service Vessels.* An accidental release of diesel fuel to marine waters would violate Federal and State water quality standards or objectives (CEQA Class I; NEPA moderate adverse, short-term).	None.	Offshore	USCG/CSLC	N/A
WAT-6: *Temporary Degradation of Surface Water Quality During Maintenance Activities* Releases of petroleum or other contaminants during maintenance activities could temporarily degrade surface water quality (CEQA Class III; NEPA moderate adverse, short-term).	**AM WAT-6a. Best Management Practices at Creek Crossings.** Best management practices would be employed at all creek crossings for major maintenance activities that could result in spills that could enter surface water pathways. **AM WAT-6b. Spill Response Plan.** The Applicant or its designated representative would prepare a spill response plan to protect surface water at and near the surface water crossings. This plan would be incorporated into the SWPPP as a requirement of the construction storm water NPDES permit and the SPCC Plan. The plan would identify specific measures to prevent, contain, and clean up any spills that could enter surface water pathways.	Onshore	USCG/CSLC	Pre-Construction, Construction
WAT-7: *Degradation of Surface Water Quality due to Erosion Caused by Regular Maintenance Activities* Regular maintenance of the pipelines could cause erosion and sedimentation of creeks from the use of maintenance vehicles or equipment, leading to short-term violations of water quality standards (CEQA Class III; NEPA minor or moderate adverse, short-term).	**AM WAT-6a. Best Management Practices at Creek Crossings** would apply to this impact.	Onshore	USCG/CSLC	Pre-Construction, Construction

Table 6.1-1 Mitigation Monitoring Program

Impact	Mitigation Measure	Location	Responsible Agency	Timing
WAT-8: *Degradation of Water Quality due to Operational Thermal Discharges* During approximately eight days per year, non-contact seawater cooling water would be discharged to the ocean at temperatures above ambient and could exceed the guidelines in the California Thermal Plan (CEQA Class III; NEPA minor adverse, short-term).	None	Offshore		Operations
ENVIRONMENTAL JUSTICE (Section 4.19)				
EJ-1: *Disproportionate Impact on Minority and Low-Income Community of a Pipeline Accident near Center Road Pipeline MP 4.1.* There would be a long-term risk of a pipeline rupture that could cause a fire that would disproportionately affect minority or low-income communities near MP 4.1 (NEPA moderate adverse, long-term).	**AM PS-4a. Class 3 Pipeline Design Criteria** (see Section 4.2, "Public Safety: Hazards and Risk Analysis"). **MM PS-4b. Pipeline Integrity Management Program**. **MM PS-4c. Install Additional Mainline Valves Equipped with Either Remote Valve Controls or Automatic Line Break Controls.** **MM PS-5a. Treat Manufactured Home Residential Community as a High Consequence Area**.	Onshore	USCG/CSLC	Pre-Construction, Construction

Key: USCG = U.S. Coast Guard; CSLC = California State Lands Commission; USEPA = U.S. Environmental Protection Agency; PHMSA = U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration

Table 6.2-1 Comparison Matrix: Proposed Offshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Offshore)	Proposed Project Impacts after Mitigation	Impacts Compared to the Proposed Project
		Santa Barbara Channel Alternative
Public Safety		
PS-1. Potential Minor Release of LNG due to Operational Incident or Natural Phenomena at the FSRU or an LNG Carrier	LS	Similar
PS-2. Potential Release of LNG due to High Energy Marine Collision or Intentional Attack	S	Greater
PS-3. Potential Release of Odorized Natural Gas due to Damage of Subsea Pipelines.	S	Similar
PS-4. Potential Release of Odorized Natural Gas due to Accidental Damage to Onshore Pipelines	S	
PS-5. Increased Potential for Injury, Fatality, and Property Damage Due to Fire or Explosion in Areas with Less Robust Housing Construction and Outdoor Activity.	S	
Marine Traffic		
MT-1: Temporary Increase in Maritime Traffic during Installation of the Mooring System, FSRU Mooring, Offshore Pipeline Construction, and Shore Crossing Resulting in Increased Safety Risks	LS	Similar
MT-2: Long-Term Increase in Maritime Traffic during Offshore Operations	LS	Greater
MT-3: Long-Term Increase in Safety Hazards due to the Presence of the FSRU and LNG Carriers	LS	Greater
MT-4: FSRU or LNG Carrier Accident Impact on Marine Traffic	LS	Greater
MT-5: Temporary Interference with Operations in the Point Mugu Sea Range or the SOCAL Range Complex during Offshore Construction	LS	Less
MT-6: Long-Term Interference with Operations in the Point Mugu Sea Range and the SOCAL Range Complex	LS	Less
MT-7: Long-Term Interference with Operations at Port Hueneme	LS	Similar

Table 6.2-1 Comparison Matrix: Proposed Offshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Offshore)	Proposed Project Impacts after Mitigation	Impacts Compared to the Proposed Project
		Santa Barbara Channel Alternative
Aesthetics		
AES-1: Alter Ocean Views from Onshore and Channel Islands Viewpoints	LS	Greater
AES-2: Alter Nighttime Ocean Views	LS	Greater
AES-3: Alter Views for Recreational Boaters	S	Greater
AES-4: Alter Offshore Views from an Eligible State Scenic Highway	LS	Greater
AES-5: Alter Ocean Views During Construction	LS	Greater
AES-6: Substantial Damage to Onshore Scenic Resources Along a State Scenic Highway	LS	
Agriculture and Soils		
AGR-1: Temporary Loss of Agricultural Land		
AGR-2: Permanent Conversion of Agricultural Land to Non-Agricultural Use		
AGR-3: Topsoil Loss, Mixing, and/or Compaction		
AGR-4: Dust Deposition		
AGR-5: Loss of Tree Rows		
AGR-6: Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line		
AGR-7 Alt: Potential for Use of Agricultural Land for Staging Areas.		
AGR -8 Alt: Permanent Conversion of Agricultural Land to Non-Agricultural Use.		
AGR -9 Alt: Potential for Use of Agricultural Land for Staging Areas.		
AGR -10 Alt: Permanent Conversion of Agricultural Land to Non-Agricultural Use.		

Table 6.2-1 Comparison Matrix: Proposed Offshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Offshore)	Proposed Project Impacts after Mitigation	Impacts Compared to the Proposed Project
		Santa Barbara Channel Alternative
Air Quality		
AIR-1: Net Emission Increases of Criteria Pollutants from Construction Activities in Designated Nonattainment Areas.	S	Similar
AIR 2: Violations of Ambient Air Quality Standards Caused by Particulate Emissions from Onshore Construction Activities	S	Similar
AIR-3: Violations of Ambient Air Quality Standards, Exposure of the Public to Substantial Pollutant Concentrations, and/or Creation of Objectionable Odors Caused by an Accidental LNG Spill or Pipeline Rupture	S	Similar
AIR-4: Emissions of Ozone Precursors from the FSRU	LS	Similar
AIR-5: Emissions of Ozone Precursors from Project Vessels Operating in California Coastal Waters	S	Slightly greater
AIR-6: Emissions of Ozone Precursors from Project Construction Activities in Federal Waters	LS	Similar
AIR-7: Temporary Ambient Air Quality Impacts Caused by Criteria Pollutant Emissions from Onshore and Offshore Construction Activities	LS	Similar
AIR-8: Ambient Air Quality Impacts Caused by Air Pollutant Emissions from the FSRU and Project Vessels	LS	Slightly greater
AIR-9: Temporary Ambient Air Quality Impacts Caused by Air Toxic Pollutant Emissions from Onshore and Offshore Construction Activities.	LS	Similar
Biology, Marine		
BioMar-1: Burial of Sessile Marine Biota	LS	Similar
BioMar-2: Temporary Avoidance of the Area Due to Increased Turbidity from Construction Activities Offshore or Accidental HDB Release of Drilling Fluids	LS	Similar
BioMar-3: Temporary or Permanent Alteration or Disturbance of Marine Biota or Sensitive Habitats, including EFH	LS	Similar

Table 6.2-1 Comparison Matrix: Proposed Offshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Offshore)	Proposed Project Impacts after Mitigation	Impacts Compared to the Proposed Project
		Santa Barbara Channel Alternative
BioMar-4: Construction or Operation Vessels Act as an Attractive Nuisance or Disrupt Marine Mammal Behavior or Migrations	LS	Greater
BioMar-5: Noise Disrupting Marine Mammal Behavior	S	Greater
BioMar-6: Mortality and Morbidity of Marine Biota from Spills	S	Greater
BioMar-7: Discharge of Bilge Water, Gray Water, and Deck Runoff	LS	Similar
BioMar-8: Release of LNG, Natural Gas, Fuel, or Oil Causes Injury or Mortality of Marine Mammals	S	Greater
BioMar-9: Collision between Project Vessels and Marine Mammals or Sea Turtles	LS	Greater
BioMar-10: Entanglement of Marine Mammals, Sea Turtles, and other Special Status Species	LS	Greater
BioMar-11: Discharge of Ballast Water Potentially Containing Exotic Species	LS	Similar
BioMar-12: Increase/Decrease in Fish Abundance or Commercially Important Benthic Species	LS	Similar
Biology, Terrestrial		
TerrBio-1: Temporary Increase in Sedimentation		
TerrBio-2: Temporary or Permanent Impacts Regarding Construction, Operation, and Maintenance Effects on Rare and Special Status Plants		
TerrBio-3: Temporary or Permanent Changes to Wetlands or Waters of the United States during Construction		
TerrBio-4: Permanent Impact Caused by Noxious Weed Invasion		
TerrBio-5: Direct Permanent Impact on Wildlife Mortality		
Cultural		
CULT-1: Maritime Archaeological Sites and Artifacts	LS	Similar
CULT-2: Native American Value	LS	Similar

Table 6.2-1 Comparison Matrix: Proposed Offshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Offshore)	Proposed Project Impacts after Mitigation	Impacts Compared to the Proposed Project
		Santa Barbara Channel Alternative
CULT-3: Terrestrial Historic or Archaeological Resources		
Energy and Minerals		
ENE-1: Access to Oil and Gas Resources	LS	Similar
ENE-2: Create Significant Effects on Local or Regional Energy Supplies	LS	Similar
Geology		
GEO-1: Worsens Existing Unfavorable Geologic Conditions and/or Releases Toxic or Other Damaging Material into the Environment	LS	Similar
GEO-2: Cause a Loss of a Unique Paleontological Resource	LS	Similar
GEO-3: Expose People or Structures to Adverse Effects Due to Direct Rupture along Fault Lines, Ground Shaking, or Seismic-related Ground Failure	LS	Similar
GEO-4: Cause Severe Damage to Project Components as a Direct Consequence of a Geologic Event, Releasing Toxic or Other Damaging Materials into the Environment.	LS	Similar
GEO-5: Damage a Pipeline due to Landslides, Mudflow, Lateral Spreading, Subsidence, Liquefaction, or Collapse as a Result of Locating the Project on a Geologic Unit or Soil that is Unstable	LS	Similar
GEO-6: Damage to Pipelines from Tsunamis	LS	Similar
Hazardous Materials		
HAZMAT-1: Release of Oil or Hazardous Materials and Contamination of Marine Environment due to Offshore Operations	LS	Similar
HAZMAT-2: Release of Oil or Hazardous Materials Spills Could Result in Soil Contamination due to Pipeline Construction Activities	LS	Similar
HAZMAT-3: Release of Existing Contaminants from Sediments, Soils, or Groundwater	LS	Similar
HAZMAT-4: Potential Disturbance or Detonation of Unexploded Ordnance due to Onshore or Offshore Construction	LS	Less

Table 6.2-1 Comparison Matrix: Proposed Offshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Offshore)	Proposed Project Impacts after Mitigation	Impacts Compared to the Proposed Project
		Santa Barbara Channel Alternative
Land Use		
LU-1: Changes in Existing Land Use		
LU-2: Disruption to Adjacent Properties		
Noise and Vibration		
NOI-1: Noise Generated During the Installation of the FSRU and Offshore Pipelines	LS	Slightly greater
NOI-2: Long-Term Noise Generated During FSRU Operations	S	Similar
NOI-3: Temporary Noise Generated by Support Vessels During Offshore Operations	S	Similar
NOI-4: Temporary Noise Generated During Construction using Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), or Other Drilling Techniques		
NOI-5: Temporary Vibration Generated During Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), and Pipeline Construction Activities		
NOI-6: Noise Generated During Construction of the Onshore Pipeline		
NOI-7: Noise Generated by Traveling to the Construction Site		
NOI-8: Noise Generated During Onshore Pipeline and Associated Facilities Operations		
Recreation		
REC-1: Temporary Restrictions on Offshore Recreational Boating and Fishing during Construction and Temporary Reductions of Fish Catch	LS	Similar
REC-2: Restricted Recreational Fishing Due to Area to be Avoided	LS	Similar
REC-3: Reduce the Quality of the Offshore Recreational Experience	S	Greater
REC-4: Reduce the Recreational Experiences at or Restrict Access to Ormond Beach		

Table 6.2-1 Comparison Matrix: Proposed Offshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Offshore)	Proposed Project Impacts after Mitigation	Impacts Compared to the Proposed Project
		Santa Barbara Channel Alternative
REC-5: Reduce or Restrict Access to Parks or Reduce User Enjoyment		
REC-6: Reduce or Restrict Access to Trails		
Socioeconomics		
SOCIO-1: Decrease in Catch Revenues for Commercial Fisheries due to Exclusion from Fishing Areas	LS	Greater
SOCIO-2: Decreased Commercial Fisheries Revenues due to Loss of Fishing Gear	LS	Greater
SOCIO-3: Increase in Regional Fishing Pressure	LS	Greater
SOCIO-4: Small Increased Demand for Public Services		
Transportation (Onshore)		
TRANS-1: Temporary Increase in Traffic		
TRANS-2: Temporary Traffic Lane Closures		
TRANS-3: Temporary Reduced On-Street Parking Access		
TRANS-4: Temporary Closure of Bike Routes		
TRANS-5: Damage to Roads During Construction		
Water Quality and Sediments		
WAT-1: Temporary Degradation of Offshore Water Quality due to Accidental Discharges	LS	Similar
WAT-2: Short-Term Increase in Turbidity or Accidental Unearthing of Contaminants during Offshore Construction	LS	Similar
WAT-3: Short-Term Degradation of Surface Water or Groundwater Quality due to Accidental Release of Drilling Fluids		
WAT-4: Short-Term Increase in Erosion due to Construction Activities		
WAT-5a: Degradation of Water Quality due to Accidental Release of Untreated Gray Water, Deck Drainage, and other Discharges that do not Meet Water Quality Standards	LS	Similar

Table 6.2-1 Comparison Matrix: Proposed Offshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Offshore)	Proposed Project Impacts after Mitigation	Impacts Compared to the Proposed Project
		Santa Barbara Channel Alternative
WAT-5b: Degradation of Water Quality due to an Accidental Release of Diesel Fuel from the FSRU, Pipelaying Vessel, or Service Vessels.	S	Similar
WAT-6: Temporary Degradation of Surface Water Quality During Maintenance Activities		
WAT-7: Degradation of Surface Water Quality due to Erosion caused by Regular Maintenance Activities		
WAT-8: Degradation of Water Quality due to Operational Thermal Discharges	LS	Similar
Environmental Justice		
EJ-1: Disproportionate Impact on Minority and Low-Income Community of a Pipeline Accident near Center Road Pipeline MP 4.1	N/A	N/A

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
Public Safety						
PS-1: Potential Release of LNG due to Operational Incident or Natural Phenomena at the FSRU or an LNG Carrier						
PS-2: Potential Release of LNG due to High Energy Marine Collision or Intentional Attack						
PS-3: Potential Release of Odorized Natural Gas due to Damage of Subsea Pipelines.						
PS-4: Potential Release of Odorized Natural Gas due to Accidental Damage to Onshore Pipelines	S	Slightly greater	Similar	Similar	Similar	Slightly greater
PS-5: Increased Potential for Injury, Fatality, and Property Damage Due to Fire or Explosion in Areas with Less Robust Housing Construction and Outdoor Activity.	S	Slightly less	Similar	Similar	Similar	N/A
Marine Traffic						
MT-1: Temporary Increase in Maritime Traffic during Installation of the Mooring System, FSRU Mooring, Offshore Pipeline Construction, and Shore Crossing Resulting in Increased Safety Risks						
MT-2: Long-Term Increase in Maritime Traffic during Offshore Operations						
MT-3: Long-Term Increase in Safety Hazards due to the Presence of the FSRU and LNG Carriers						
MT-4: FSRU or LNG Carrier Accident Impact on Marine Traffic						

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
MT-5: Temporary Interference with Operations in the Point Mugu Sea Range or the SOCAL Range Complex during Offshore Construction						
MT-6: Long-Term Interference with Operations in the Point Mugu Sea Range and the SOCAL Range Complex						
MT-7: Long-Term Interference with Operations at Port Hueneme						
Aesthetics						
AES-1: Alter Ocean Views from Onshore and Channel Islands Viewpoints						
AES-2: Alter Nighttime Ocean Views						
AES-3: Alter Views for Recreational Boaters						
AES-4: Alter Offshore Views from an Eligible State Scenic Highway						
AES-5: Alter Ocean Views During Construction						
AES-6: Substantial Damage to Onshore Scenic Resources Along a State Scenic Highway	LS	Similar	Similar	Similar	N/A	Similar
Agriculture and Soils						
AGR-1: Temporary Loss of Agricultural Land	LS	Less	Similar	Similar	N/A	Less
AGR-2: Permanent Conversion of Agricultural Land to Non-Agricultural Use	S	Similar	Similar	Similar	N/A	Similar
AGR-3: Topsoil Loss, Mixing, and/or Compaction	LS	Less	Similar	Similar	N/A	Similar
AGR-4: Dust Deposition	LS	Less	Similar	Similar	N/A	Similar
AGR-5: Loss of Tree Rows	LS	Less	Less	Less	N/A	Less

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
AGR-6: Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line	LS	Less	Similar	Similar	N/A	Similar
AGR-7 Alt: Potential for Use of Agricultural Land for Staging Areas.						
AGR-8 Alt: Permanent Conversion of Agricultural Land to Non-Agricultural Use.						
AGR-9 Alt: Potential for Use of Agricultural Land for Staging Areas.						
AGR-10 Alt: Permanent Conversion of Agricultural Land to Non-Agricultural Use.						
Air Quality						
AIR-1: Net Emission Increases of Criteria Pollutants from Construction Activities in Designated Nonattainment Areas.	S	Similar	Similar	Similar	Similar	Similar
AIR 2: Violations of Ambient Air Quality Standards Caused by Particulate Emissions from Onshore Construction Activities	S	Similar	Similar	Similar	Similar	Similar
AIR-3: Violations of Ambient Air Quality Standards, Exposure of the Public to Substantial Pollutant Concentrations, and/or Creation of Objectionable Odors Caused by an Accidental LNG Spill or Pipeline Rupture	S	Similar	Similar	Similar	Similar	Similar
AIR-4: Emissions of Ozone Precursors from the FSRU						
AIR-5: Emissions of Ozone Precursors from Project Vessels Operating in California Coastal Waters						

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
AIR-6: Emissions of Ozone Precursors from Project Construction Activities in Federal Waters						
AIR-7: Temporary Ambient Air Quality Impacts Caused by Criteria Pollutant Emissions from Onshore and Offshore Construction Activities	LS	Similar	Similar	Similar	Similar	Similar
AIR-8: Ambient Air Quality Impacts Caused by Air Pollutant Emissions from the FSRU and Project Vessels						
AIR-9: Temporary Ambient Air Quality Impacts Caused by Air Toxic Pollutant Emissions from Onshore and Offshore Construction Activities.	LS	Similar	Similar	Similar	Similar	Similar
Biology, Marine						
BioMar-1: Burial of Sessile Marine Biota						
BioMar-2: Temporary Avoidance of the Area Due to Increased Turbidity from Construction Activities Offshore or Accidental HDB Release of Drilling Fluids						
BioMar-3: Temporary or Permanent Alteration or Disturbance of Marine Biota or Sensitive Habitats						
BioMar-4: Construction or Operation Vessels Act as an Attractive Nuisance or Disrupt Marine Mammal Behavior or Migrations						
BioMar-5: Noise Disrupting Marine Mammal Behavior						
BioMar-6: Mortality and Morbidity of Marine Biota from Spills						
BioMar-7: Discharge of Bilge Water, Gray Water, and Deck Runoff						

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
BioMar-8: Release of LNG, Natural Gas, Fuel, or Oil Causes Injury or Mortality of Marine Mammals						
BioMar-9: Collision between Project Vessels and Marine Mammals or Sea Turtles						
BioMar-10: Entanglement of Marine Mammals, Sea Turtles, and other Special Status Species						
BioMar-11: Discharge of Ballast Water Potentially Containing Exotic Species						
BioMar-12: Increase/Decrease in Fish Abundance or Commercially Important Benthic Species						
Biology, Terrestrial						
TerrBio-1: Temporary Increase in Sedimentation	LS	Less	Slightly less	Less	Greater	Less
TerrBio-2: Temporary or Permanent Impacts Regarding Construction, Operation, and Maintenance Effects on Rare and Special Status Plants	LS	Less	Similar	Similar	Similar	Less
TerrBio-3: Temporary or Permanent Changes to Wetlands or Waters of the United States during Construction	LS	Less	Similar	Less	Greater	Less
TerrBio-4: Permanent Impact Caused by Noxious Weed Invasion	LS	Less	Similar	Similar	Similar	Less
TerrBio-5: Direct Permanent Impact on Wildlife Mortality	LS	Less	Similar	Similar	Similar	Less
Cultural						
CULT-1: Maritime Archaeological Sites and Artifacts						
CULT-2: Native American Value	LS	Greater	Similar	Similar	Similar	Similar

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
CULT-3: Terrestrial Historic or Archaeological Resources	LS	Greater	Similar	Similar	Similar	Similar
Energy and Minerals						
ENE-1: Access to Oil and Gas Resources	LS	Similar	Similar	Similar	Similar	Similar
ENE-2: Create Significant Effects on Local or Regional Energy Supplies	LS	Similar	Similar	Similar	Similar	Similar
Geology						
GEO-1: Worsens Existing Unfavorable Geologic Conditions and/or Releases Toxic or Other Damaging Material into the Environment	LS	Similar	Similar	Similar	Similar	Similar
GEO-2: Cause a Loss of a Unique Paleontological Resource	LS	Similar	Similar	Similar	Similar	Similar
GEO-3: Expose People or Structures to Adverse Effects Due to Direct Rupture along Fault Lines, Ground Shaking, or Seismic-related Ground Failure	LS	Similar	Similar	Similar	Similar	Similar
GEO-4: Cause Severe Damage to Project Components as a Direct Consequence of a Geologic Event, Releasing Toxic or Other Damaging Materials into the Environment.	LS	Similar	Similar	Similar	Similar	Similar
GEO-5: Damage a Pipeline due to Landslides, Mudflow, Lateral Spreading, Subsidence, Liquefaction, or Collapse as a Result of Locating the Project on a Geologic Unit or Soil that is Unstable	LS	Similar	Similar	Similar	Similar	Similar
GEO-6: Damage to Pipelines from Tsunamis	LS	Similar	Similar	Similar	Similar	N/A

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
Hazardous Materials						
HAZMAT-1: Release of Oil or Hazardous Materials and Contamination of Marine Environment due to Offshore Operations						
HAZMAT-2: Release of Oil or Hazardous Materials Spills Could Result in Soil Contamination due to Pipeline Construction Activities	LS	Similar	Similar	Similar	Similar	Similar
HAZMAT-3: Release of Existing Contaminants from Sediments, Soils, or Groundwater	LS	Slightly greater	Similar	Similar	Similar	Similar
HAZMAT-4: Potential Disturbance or Detonation of Unexploded Ordnance due to Onshore or Offshore Construction	LS	N/A	N/A	N/A	Similar	N/A
Land Use						
LU-1: Changes in Existing Land Use	LS	Similar	Similar	Similar	Similar	Similar
LU-2: Disruption to Adjacent Properties	LS	Greater	Greater	Greater	Greater	Greater
Noise and Vibration						
NOI-1: Noise Generated During the Installation of the FSRU and Offshore Pipelines						
NOI-2: Long-Term Noise Generated During FSRU Operations						
NOI-3: Temporary Noise Generated by Support Vessels During Offshore Operations						
NOI-4: Temporary Noise Generated During Construction using Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), or Other Drilling Techniques	S	Greater	Less	Similar	Similar	Greater

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
NOI-5: Temporary Vibration Generated During Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), and Pipeline Construction Activities	S	Greater	Less	Similar	Similar	Greater
NOI-6: Noise Generated During Construction of the Onshore Pipeline	S	Greater	Less	Similar	Similar	Greater
NOI-7: Noise Generated by Traveling to the Construction Site	LS	Greater	Less	Similar	Similar	Greater
NOI-8: Noise Generated During Onshore Pipeline and Associated Facilities Operations	LS	Similar	Similar	Similar	Similar	Greater
Recreation						
REC-1: Temporary Restrictions on Offshore Recreational Boating and Fishing during Construction and Temporary Reductions of Fish Catch						
REC-2: Restricted Recreational Fishing Due to Area to be Avoided						
REC-3: Reduce the Quality of the Offshore Recreational Experience						
REC-4: Reduce the Recreational Experiences at or Restrict Access to Ormond Beach/Mandalay Beach	LS	Similar	Similar	Similar	Similar	Similar
REC-5: Reduce or Restrict Access to Parks or Reduce User Enjoyment	LS	Similar	Similar	Similar	Similar	Similar
REC-6: Reduce or Restrict Access to Trails	LS	Similar	Similar	Similar	Similar	Similar

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
Socioeconomics						
SOCIO-1: Decrease in Catch Revenues for Commercial Fisheries due to Exclusion from Fishing Areas						
SOCIO-2: Decreased Commercial Fisheries Revenues due to Loss of Fishing Gear						
SOCIO-3: Increase in Regional Fishing Pressure						
SOCIO-4: Small Increased Demand for Public Services	LS	Similar	Similar	Similar	Similar	Similar
Transportation						
TRANS-1: Temporary Increase in Traffic	LS	Slightly greater	Similar	Similar	Similar	Slightly greater
TRANS-2: Temporary Traffic Lane Closures	LS	Slightly greater	Similar	Similar	Similar	Slightly greater
TRANS-3: Temporary Reduced On-Street Parking Access	LS	Slightly greater	Similar	Similar	Similar	Slightly greater
TRANS-4: Temporary Closure of Bike Routes	LS	Slightly greater	Slightly less	Similar	Similar	Slightly greater
TRANS-5: Damage to Roads During Construction	LS	Similar	Similar	Similar	Similar	Similar
Water Quality and Sediments						
WAT-1: Temporary Degradation of Offshore Water Quality due to Accidental Discharges						
WAT-2: Short-Term Increase in Turbidity or Accidental Unearthing of Contaminants during Offshore Construction						

Table 6.2-2 Comparison Matrix: Proposed Onshore Project Components and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Onshore)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project				
		Center Road Pipeline Alternative 1	Center Road Pipeline Alternative 2	Center Road Pipeline Alternative 3	Line 225 Pipeline Loop Alternative	Gonzales Road Alternative
WAT-3: Short-Term Degradation of Surface Water or Groundwater Quality due to Accidental Release of Drilling Fluids	LS	Similar	Similar	Similar	Similar	Similar
WAT-4: Short-Term Increase in Erosion due to Construction Activities	LS	Similar	Similar	Similar	Similar	Similar
WAT-5a: Degradation of Water Quality due to Accidental Release of Untreated Gray Water, Deck Drainage, and other Discharges that do not Meet Water Quality Standards						
WAT-5b: Degradation of Water Quality due to an Accidental Release of Diesel Fuel from the FSRU, Pipelaying Vessel, or Service Vessels.						
WAT-6: Temporary Degradation of Surface Water Quality During Maintenance Activities	LS	Similar	Similar	Similar	Similar	Similar
WAT-7: Degradation of Surface Water Quality due to Erosion caused by Regular Maintenance Activities	LS	Similar	Similar	Similar	Similar	Similar
WAT-8: Degradation of Water Quality due to Operational Thermal Discharges						
Environmental Justice						
EJ-1: Disproportionate Impact on Minority and Low-Income Community of a Pipeline Accident near Center Road Pipeline MP 4.1	N/A	N/A	Similar	Similar	N/A	N/A

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
Public Safety				
PS-1: Potential Release of LNG due to Operational Incident or Natural Phenomena at the FSRU or an LNG Carrier				
PS-2: Potential Release of LNG due to High Energy Marine Collision or Intentional Attack				
PS-3: Potential Release of Odorized Natural Gas due to Damage of Subsea Pipelines.	S	Similar	Similar	Similar
PS-4: Potential Release of Odorized Natural Gas due to Accidental Damage to Onshore Pipelines	S	Similar	Similar	Similar
PS-5: Increased Potential for Injury, Fatality, and Property Damage Due to Fire or Explosion in Areas with Less Robust Housing Construction and Outdoor Activity.				
Marine Traffic				
MT-1: Temporary Increase in Maritime Traffic during Installation of the Mooring System, FSRU Mooring, Offshore Pipeline Construction, and Shore Crossing Resulting in Increased Safety Risks	LS	Similar	Similar	Similar
MT-2: Long-Term Increase in Maritime Traffic during Offshore Operations				
MT-3: Long-Term Increase in Safety Hazards due to the Presence of the FSRU and LNG Carriers				
MT-4: FSRU or LNG Carrier Accident Impact on Marine Traffic				

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
MT-5: Temporary Interference with Operations in the Point Mugu Sea Range or the SOCAL Range Complex during Offshore Construction				
MT-6: Long-Term Interference with Operations in the Point Mugu Sea Range and the SOCAL Range Complex				
MT-7: Long-Term Interference with Operations at Port Hueneme				
Aesthetics				
AES-1: Alter Ocean Views from Onshore and Channel Islands Viewpoints				
AES-2: Alter Nighttime Ocean Views				
AES-3: Alter Views for Recreational Boaters				
AES-4: Alter Offshore Views from an Eligible State Scenic Highway				
AES-5: Alter Ocean Views During Construction	LS	Similar	Similar	Similar
AES-6: Substantial Damage to Onshore Scenic Resources Along a State Scenic Highway				
Agriculture and Soils				
AGR-1: Temporary Loss of Agricultural Land	LS	Similar	Greater	Greater
AGR-2: Permanent Conversion of Agricultural Land to Non-Agricultural Use	S	Similar	Greater	Greater
AGR-3: Topsoil Loss, Mixing, and/or Compaction	LS	Similar	Similar	Similar
AGR-4: Dust Deposition	LS	Similar	Similar	Similar
AGR-5: Loss of Tree Rows				

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
AGR-6: Impacts from a Leak or Fire Associated with the Natural Gas Transmission Line				
AGR-7 Alt: Potential for Use of Agricultural Land for Staging Areas.	N/A	N/A	N/A	LS
AGR-8 Alt: Permanent Conversion of Agricultural Land to Non-Agricultural Use.	N/A	N/A	N/A	S
AGR-9 Alt: Potential for Use of Agricultural Land for Staging Areas.	N/A	N/A	LS	N/A
AGR-10 Alt: Permanent Conversion of Agricultural Land to Non-Agricultural Use.	N/A	N/A	S	N/A
Air Quality				
AIR-1: Net Emission Increases of Criteria Pollutants from Construction Activities in Designated Nonattainment Areas.	S	Similar	Similar	Similar
AIR 2: Violations of Ambient Air Quality Standards Caused by Particulate Emissions from Onshore Construction Activities	S	Similar	Similar	Similar
AIR-3: Violations of Ambient Air Quality Standards, Exposure of the Public to Substantial Pollutant Concentrations, and/or Creation of Objectionable Odors Caused by an Accidental LNG Spill or Pipeline Rupture	S	Similar	Similar	Similar
AIR-4: Emissions of Ozone Precursors from the FSRU				
AIR-5: Emissions of Ozone Precursors from Project Vessels Operating in California Coastal Waters				
AIR-6: Emissions of Ozone Precursors from Project Construction Activities in Federal Waters				

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
AIR-7: Temporary Ambient Air Quality Impacts Caused by Criteria Pollutant Emissions from Onshore and Offshore Construction Activities	LS	Similar	Similar	Similar
AIR-8: Ambient Air Quality Impacts Caused by Air Pollutant Emissions from the FSRU and Project Vessels				
AIR-9: Temporary Ambient Air Quality Impacts Caused by Air Toxic Pollutant Emissions from Onshore and Offshore Construction Activities.-	LS	Similar	Similar	Similar
Biology, Marine				
BioMar-1: Burial of Sessile Marine Biota	LS	Similar	Similar	Similar
BioMar-2: Temporary Avoidance of the Area Due to Increased Turbidity from Construction Activities Offshore or Accidental HDB Release of Drilling Fluids	LS	Similar	Similar	Similar
BioMar-3: Temporary or Permanent Alteration or Disturbance of Marine Biota or Sensitive Habitats	LS	Similar	Similar	Similar
BioMar-4: Construction or Operation Vessels Act as an Attractive Nuisance or Disrupt Marine Mammal Behavior or Migrations	LS	Similar	Similar	Similar
BioMar-5: Noise Disrupting Marine Mammal Behavior	S	Similar	Similar	Similar
BioMar-6: Mortality and Morbidity of Marine Biota from Spills	S	Similar	Similar	Similar
BioMar-7: Discharge of Bilge Water, Gray Water, and Deck Runoff				
BioMar-8: Release of LNG, Natural Gas, Fuel, or Oil Causes Injury or Mortality of Marine Mammals				
BioMar-9: Collision between Project Vessels and Marine Mammals or Sea Turtles	LS	Similar	Similar	Similar

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
BioMar-10: Entanglement of Marine Mammals, Sea Turtles, and other Special Status Species	LS	Similar	Similar	Similar
BioMar-11: Discharge of Ballast Water Potentially Containing Exotic Species				
BioMar-12: Increase/Decrease in Fish Abundance or Commercially Important Benthic Species	LS	Similar	Similar	Similar
Biology, Terrestrial				
TerrBio-1: Temporary Increase in Sedimentation	LS	Similar	Similar	Similar
TerrBio-2: Temporary or Permanent Impacts Regarding Construction, Operation, and Maintenance Effects on Rare and Special Status Plants	LS	Greater	Greater	Greater
TerrBio-3: Temporary or Permanent Changes to Wetlands or Waters of the United States during Construction	LS	Less	Greater	Greater
TerrBio-4: Permanent Impact Caused by Noxious Weed Invasion	LS	Similar	Greater	Greater
TerrBio-5: Direct Permanent Impact on Wildlife Mortality	LS	Similar	Greater	Greater
Cultural				
CULTURAL-1: Maritime Archaeological Sites and Artifacts	LS	Similar	Similar	Similar
CULTURAL-2: Native American Value	LS	Similar	Similar	Similar
CULTURAL-3: Terrestrial Historic or Archaeological Resources	LS	Similar	Similar	Similar
Energy and Minerals				
ENE-1: Access to Oil and Gas Resources	LS	Similar	Similar	Similar
ENE-2: Create Significant Effects on Local or Regional Energy Supplies	LS	Similar	Similar	Similar

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
Geology				
GEO-1 Worsens Existing Unfavorable Geologic Conditions and/or Releases Toxic or Other Damaging Material into the Environment	LS	Similar	Similar	Similar
GEO-2: Cause a Loss of a Unique Paleontological Resource	LS	Similar	Similar	Similar
GEO-3: Expose People or Structures to Adverse Effects Due to Direct Rupture along Fault Lines, Ground Shaking, or Seismic-related Ground Failure	LS	Similar	Similar	Similar
GEO-4: Cause Severe Damage to Project Components as a Direct Consequence of a Geologic Event, Releasing Toxic or Other Damaging Materials into the Environment.	LS	Similar	Similar	Similar
GEO-5: Damage a Pipeline due to Landslides, Mudflow, Lateral Spreading, Subsidence, Liquefaction, or Collapse as a Result of Locating the Project on a Geologic Unit or Soil that is Unstable	LS	Similar	Similar	Similar
GEO-6: Damage to Pipelines from Tsunamis	LS	Similar	Similar	Similar
Hazardous Materials				
HAZMAT-1: Release of Oil or Hazardous Materials and Contamination of Marine Environment due to Offshore Operations				
HAZMAT-2: Release of Oil or Hazardous Materials Spills Could Result in Soil Contamination due to Pipeline Construction Activities	LS	Similar	Similar	Similar
HAZMAT-3: Release of Existing Contaminants from Sediments, Soils, or Groundwater	LS	Similar	Similar	Slightly greater

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
HAZMAT-4: Potential Disturbance or Detonation of Unexploded Ordnance due to Onshore or Offshore Construction	LS	N/A	Greater	Similar
Land Use				
LU-1: Changes in Existing Land Use	LS	Similar	Similar	Similar
LU-2: Disruption to Adjacent Properties	LS	Greater	Similar	Similar
Noise and Vibration				
NOI-1: Noise Generated During the Installation of the FSRU and Offshore Pipelines				
NOI-2: Long-Term Noise Generated During FSRU Operations				
NOI-3: Temporary Noise Generated by Support Vessels During Offshore Operations				
NOI-4: Temporary Noise Generated During Construction using Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), or Other Drilling Techniques	S	Less	Less	Less
NOI-5: Temporary Vibration Generated During Horizontal Directional Boring (HDB), Horizontal Directional Drilling (HDD), and Pipeline Construction Activities	S	Less	Less	Less
NOI-6: Noise Generated During Construction of the Onshore Pipeline				
NOI-7: Noise Generated by Traveling to the Construction Site	LS	Similar	Similar	Similar
NOI-8: Noise Generated During Onshore Pipeline and Associated Facilities Operations	LS	Similar	Similar	Similar

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
Recreation				
REC-1: Temporary Restrictions on Offshore Recreational Boating and Fishing during Construction and Temporary Reductions of Fish Catch	LS	Similar	Similar	Similar
REC-2: Restricted Recreational Fishing Due to Area to be Avoided				
REC-3: Reduce the Quality of the Offshore Recreational Experience				
REC-4: Reduce the Recreational Experiences at or Restrict Access to Ormond Beach	LS	Similar	Less	Significantly greater
REC-5: Reduce or Restrict Access to Parks or Reduce User Enjoyment	LS	Similar	Less	Significantly greater
REC-6: Reduce or Restrict Access to Trails				
Socioeconomics				
SOCIO-1: Decrease in Catch Revenues for Commercial Fisheries due to Exclusion from Fishing Areas				
SOCIO-2: Decreased Commercial Fisheries Revenues due to Loss of Fishing Gear				
SOCIO-3: Increase in Regional Fishing Pressure				
SOCIO-4: Small Increased Demand for Public Services	LS	Similar	Similar	Similar
Transportation				
TRANS-1: Temporary Increase in Traffic	LS	Similar	Similar	Similar
TRANS-2: Temporary Traffic Lane Closures	LS	Similar	Similar	Similar
TRANS-3: Temporary Reduced On-Street Parking Access				

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
TRANS-4: Temporary Closure of Bike Routes				
TRANS-5: Damage to Roads During Construction	LS	Similar	Similar	Similar
Water Quality and Sediments				
WAT-1: Temporary Degradation of Offshore Water Quality due to Accidental Discharges	LS	Similar	Similar	Similar
WAT-2: Short-Term Increase in Turbidity or Accidental Unearthing of Contaminants during Offshore Construction				
WAT-3: Short-Term Degradation of Surface Water or Groundwater Quality due to Accidental Release of Drilling Fluids	LS	Similar	Similar	Similar
WAT-4: Short-Term Increase in Erosion due to Construction Activities	LS	Similar	Similar	Similar
WAT-5a: Degradation of Water Quality due to Accidental Release of Untreated Gray Water, Deck Drainage, and other Discharges that do Not Meet Water Quality Standards				
WAT-5b: Degradation of Water Quality due to an Accidental Release of Diesel Fuel from the FSRU, Pipelaying Vessel, or Service Vessels.				
WAT-6: Temporary Degradation of Surface Water Quality During Maintenance Activities	LS	Similar	Similar	Similar
WAT-7: Degradation of Surface Water Quality due to Erosion caused by Regular Maintenance Activities	LS	Similar	Similar	Similar
WAT-8: Degradation of Water Quality due to Operational Thermal Discharges				

Table 6.2-3 Comparison Matrix: Proposed Shore Crossing and Alternatives

Note: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact; shading indicates no impact for this Project component

Issue Area and Impacts (Shore Crossing)	Proposed Project Impacts After Mitigation	Impacts Compared to the Proposed Project		
		Mandalay Shore Crossing Alternative	Point Mugu Shore Crossing	Arnold Road Shore Crossing
Environmental Justice				
EJ-1: Disproportionate Impact on Minority and Low-Income Community of a Pipeline Accident near Center Road Pipeline MP 4.1	N/A	N/A	N/A	N/A

Notes: S = Significant; LS = Less Than Significant; N/A = not applicable or no impact.

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